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BOMBAY BRANCH
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From SECRETARY OF STATE to VICEROY, 14th January 1897.

My two telegrams about plague and Moslem pilgrims. Russia now presses Her Majesty's Government to prohibit pilgrimage from India this year. Turkey, on religious grounds, declines to prohibit. Austria apparently shares Russian fears. In present circumstances Bombay is not good rendezvous. Please telegraph early reply, as answer must be given to Russia.

From SECRETARY OF STATE to GOVERNOR, BOMBAY, 14th January 1897.

Plague. Egyptian delegates. Please give all possible assistance to Rogers and Bitter. Will arrive on 24th January.

From SECRETARY OF STATE to GOVERNOR, BOMBAY, 16th January 1897.

Fifty-one plague deaths reported from Poona. Has plague appeared in epidemic form at other places besides Bombay and Karachi? Send, for the future, a weekly telegram of mortality, with any explanations that may be necessary.

From SECRETARY OF STATE to VICEROY, 18th January 1897.

Have considered Bombay plague and issued instructions to Bombay, who will repeat to you. Meanwhile, on following matters of general application we suggest, (1) Moslem pilgrimage from infected Indian ports should be stopped for present year, full information being published in provinces of and outside India, whence pilgrims go through Bombay; (2) should not additional powers be given to town, cantonments, and stations on railways from Bombay and Karachi, analogous to Section 434 of Bombay City Municipal Act, for examining arrival passengers and for stopping and segregating those suspected of plague.

From SECRETARY OF STATE to GOVERNOR, BOMBAY, 18th January 1897.

Continuance of plague epidemic in Bombay has made several European powers press for restrictive measures to prevent passage of plague to Europe. In interest of Bombay and its trade matter most important. After consulting experts, local and scientific, I consider (1) that all plague cases should be segregated apart in separate hospitals; due allowance should be made for sex and caste; if opposition arises it should be faced; (2) that house-to-house visitation and inspection should be put in force in manner least repugnant to feelings of people, a special staff being organised under medical men; (3) that we should send you temporary staff of doctors and nurses if you require them; (4) that steps should be taken to give full trial to Yersin's system of treatment. Please repeat to Government of India.

From GOVERNOR, BOMBAY, 19th January 1897.

Your telegram of 16th January. Civil Surgeon suspects epidemic plague at Poona. Almost without exception cases so far reported, except Poona, have gone from Bombay or Karachi. Large emigration from Bombay. Detection sometimes evaded.

From SECRETARY OF STATE to GOVERNOR, BOMBAY, 19th January 1897.

Please telegraph full account for publication in Europe of remedial and preventive measures already taken, and now to be taken, against plague in Bombay, Karachi, and Poona, and for prevention of its spread to other countries and to other parts of India.

From VICEROY, 20th January 1897.

Your telegram of 18th January to us and Government of Bombay. Latter will reply on four points alluded to in it. We are arranging that Bombay and Karachi shall cease to be ports for departure of pilgrim ships 1st February. Widest publicity will be given to this decision, as you suggest. Government of Bombay estimate that one-fourth of the pilgrims who leave Bombay are Russian subjects, and urge that Russia should be asked to exert influence to prevent their coming through Arabia to India. We trust that Her Majesty's Government will adopt suggestion. Section 434 Bombay City Municipal Act has been applied to Poona, Kirkee, Deesa, and Ahmedabad cantonments. We have consulted Bombay as to need for extending it to other cantonments and towns. Latter impossible without legislation. Arrangements have been made at numerous stations on all railway lines from Bombay and Karachi for medical inspection and removal of sufferers from plague. These we believe are working well, but we have asked Government of Bombay whether they are efficient or require to be added to. We are suggesting, on advice of Director-General of the Indian Medical Service, who recently visited Bombay, that infected houses should be at once evacuated, and accommodation provided for persons removed from them. This course favoured by medical opinion at Bombay.

From GOVERNOR, BOMBAY, 20th January 1897.

(Telegraphic.)

Your telegram of the 18th. We have prepared hospitals for Jains, Parsees, Khojas, and certain other classes, for domestic servants and for staff of the Port Commissioner and tramways, while for Brahmins and Muhammadans hospital accommodation is being provided. As far as possible all plague patients are sent to hospital for treatment; but where the relatives object, it is not deemed advisable to resort to force. To do so would create general panic, and thereupon all scavengers and others employed in conservancy work might leave the city at once, and thereby measures for combatting the plague would be arrested. Possibly also rioting might ensue. Endeavours are being made to secure more native doctors, as they are most useful in house visiting. Should more nurses and doctors be required application will be made for them. The services of Army Medical doctors who served in Hong Kong during the plague would be acceptable. Steps have been taken for securing a supply of Yersin's serum, and its arrival is expected.

From GOVERNOR, BOMBAY, 21st January 1897.

Your telegram of 19th January. Following remedial measures against plague in Bombay City:—Thorough cleansing and disinfecting buildings, where plague, fever, or suspected fever occur, flushing and washing with disinfecting fluid discharged from steam engines and pumps, disinfecting drains, privies, and connections, burning bedding, clothes and infectable articles, burning dead rats and refuse, removal of tiles and partitions to admit light and ventilation, withdrawal of water supply inside buildings where dampness caused, washing infected buildings with quicklime, and free use of disinfectants also in adjoining buildings, distribution of disinfectants where outbreak apprehended, increase of sanitary staff and medical officers, free treatment of poor by municipal medical officers in hospital and their houses, relief of destitute and suffering poor, removal to municipal hospital of affected persons from crowded buildings where possible, or those who cannot be isolated or are destitute or deserted.

Preventive measures:—Quicklime washing localities in which plague apprehended, free distribution of disinfectants to public, cremation of Hindu dead irrespective of castes, burning of infected huts and temporary structures, erection of shelters for those leaving infected houses, condemnation of buildings unfit for occupation, medical inspection of passengers leaving Bombay by through trains, restriction of use of warehouses or shops in or under infected buildings, and disinfection, provision of segregation hospitals for castes and classes controlled and managed by caste committees, constant inspection of buildings, &c. by Health Department, restriction of road watering in lanes and small streets to avoid dampness.

Remedial and preventive measures at Karachi are cleansing and disinfecting streets and lanes, vigilant house-to-house inspection, supervision of burial and burning grounds, thorough disinfection of infected houses, destruction of clothing, burning infected huts, good isolation hospital arrangements, large camps ready, and healthy being induced to leave infected quarters and migrate to camps, large numbers already left by rail, power taken to enter infected houses and cleanse, ventilate, or destroy, migration of sick persons without permission forbidden, police and military cordon protects cantonments, lady doctor treating females, rigorous and effective inspection of railway passengers by European inspectors and doctors.

Poona arrangements:—Medical men inspect persons arriving by rail and road, discovered plague patients taken to special hospital, not permitted to enter city or cantonment; in city, plague houses thoroughly disinfected, clothing burnt, wells disinfected where possible, removal of inmates of plague houses carried out, special houses for them in open spaces being obtained, vigorous general sanitation; other measures under consideration in cantonment, special cleansing operations for drains (of) houses, powers taken to enter and cleanse buildings, isolate houses, and remove patients to hospital unless properly accommodated, overcrowding and dampness prevented. No cases yet in Poona cantonment, but 35, of which 23 believed to be indigenous, in city, besides persons removed direct from railway station to hospital. Government arranging for more rigorous inspection of persons leaving Bombay by road, rail, and sea, special medical staff under commissioned officer being engaged, house to house visitation at Bombay being organised, and more medical officers being procured, special sanitary officer appointed for purpose of inspecting operations and reporting to Government on their efficiency at all important towns in Bombay Presidency. Along railways there has been inspection of railway passengers from Bombay and removal to special hospitals of persons suffering from plague. Special inquiries being made regarding sufficiency of these arrangements.

From GOVERNOR, BOMBAY, 22nd January 1897.

Please send to Bombay, if possible, 10 Hindustani-speaking Junior Army Medical Department men.

From SECRETARY OF STATE to VICEROY, 22nd January 1897.

Is there quarantine at Burma ports against Bombay, and for what period? Reply urgently required.

From SECRETARY OF STATE to GOVERNOR, BOMBAY, 22nd January 1897.

Plague. Please give all possible assistance to three Austrian experts about to visit Bombay.

From SECRETARY OF STATE to GOVERNOR, BOMBAY, 23rd January 1897.

Plague. Experts lay stress on importance, in addition to general disinfection, of casting away and burning earth of floors to depth of four inches. European troops were invited to volunteer for this work at Hong Kong. There were 11 cases and two deaths among troops so employed.

From VICEROY, 25th January 1897.

Your telegram of 22nd January. Quarantine imposed on arrivals from Bombay at Rangoon, Moulmein, Akyab, and Bassein; 15 days if there has been a case of plague on board; if there has not been a case, and vessel has undergone eight days' quarantine at intermediate port, vessel must be admitted to free pratique, otherwise Health Officer may at discretion free from quarantine or impose quarantine of eight days.

From SECRETARY OF STATE to VICEROY, 27th January 1897.

Governor of Bombay has telegraphed for 10 young Army doctors. War Office advise call for volunteers among Army Medical Department officers coming home this season, and suggest 2l. a day, in addition to English pay and allowances, be offered during period of special duty. Can you arrange accordingly to meet Bombay requirement? Inform Bombay.

From SECRETARY OF STATE to GOVERNOR, Bombay, 27th January 1897.

Expert here suggests that if Yersin has reached Bombay you should employ him to treat plague patients.

From SECRETARY OF STATE to GOVERNOR, Bombay, 29th January 1897.

Your telegram of 20th January. Doctors Reade, Borrodaile, Beveridge, Army Medical Department, employed Hong Kong plague, will arrive about 19th February. Do you wish to have Dr. Lowson, Hong Kong Colonial Service? Highly recommended.

From the GOVERNOR, Bombay, 1st February 1897.

In continuation of previous telegram of 21st January. In Bombay, hospitals are more freely resorted to by plague patients; number employed on cleansing and disinfecting operations very much larger. Plague being suppressed in quarters where it has been worst, but extending to other quarters to some extent. Cleansing and disinfecting have now overtaken the infected spots, and are extending as precautions against plague in quarters considered most open to attack. For week ended 29th January, diminution of deaths from plague and total deaths from all causes in Bombay City. General feeling somewhat more hopeful. In Poona up to date 58 indigenous cases, 48 in one quarter; no indigenous cases in cantonment. In Karachi plague mortality for week ended 22nd January, 208; for week ended 29th, 176; decreasing in two worst affected quarters; increasing in two new quarters; confined to crowded quarters; cantonment free; 3,000 people in health camp. Estimated that quarter of total population left Karachi. Only plague deaths in Sind outside Karachi are reported to be of travellers; same is true of Bombay Presidency outside Bombay and Poona, except in Bandora and Coorla suburbs of Bombay, and Bhiwandi, an unhealthy town in Thana district. Inspection of travellers along all main line communications effective; many cases detected in travellers, who are taken to special hospitals. All ocean-going vessels leaving Bombay inspected before starting. Pilgrim ships are prohibited from leaving Bombay from and after 1st February.

From GOVERNOR, Bombay, 1st February 1897.

Your telegram of 29th January. Should like Lowson.

From SECRETARY OF STATE to GOVERNOR, Bombay, 1st February 1897.

Lord Lister called here to-day to say that he has very high opinion of efficacy of Yersin's treatment of plague, and considers employment of Yersin by your Government most desirable in view of similar steps taken by German and other Governments. He believes treatment acts with great certainty and very speedily.

From GOVERNOR, Bombay, 2nd February 1897.

Your telegram of yesterday. Yersin gone Annam to prepare serum.

From SECRETARY OF STATE to GOVERNOR, BOMBAY, 2nd February 1897.

It has been suggested, with some scientific support, that recent vaccination confers some immunity against other germ diseases besides small-pox. Suggestion might be laid before your scientific experts, for enquiry whether recently-vaccinated children enjoy any apparent immunity from plague, and whether matter merits further verification.

From VICEROY, 2nd February 1897.

Your telegram of 27th January. There are enough officers of Indian Medical Department to meet probable requirements, so far as they can at present be judged. Government of India think it undesirable to employ other agency until supply of such officers exhausted. Ten officers of Indian Medical Department being deputed to Bombay in place of officers of Army Medical Department asked for.

From SECRETARY OF STATE to GOVERNOR, BOMBAY, 3rd February 1897.

Dr. Lowson engaged. Will arrive about 19th at Bombay. He was chief medical officer at Hong Kong during plague.

From GOVERNOR, BOMBAY, 3rd February 1897.

My telegram of yesterday. Yersin expected to arrive at Bombay at the beginning of next month.

From SECRETARY OF STATE to VICEROY, 4th February 1897.

Your telegram of 12th January. Please telegraph details about plague deaths on pilgrim ships, especially period of incubation, spread of disease among pilgrims. Facts required for Venice Conference.

From VICEROY, 4th February 1897.

We propose that Local Government Board Inspector should be deputed to report on state of Bombay and Karachi, especially with a view to obtaining independent opinion as to extent to which nature of buildings has contributed to outbreak of plague. Can you arrange for early deputation of officer with thorough knowledge of building? This qualification most essential.

From SECRETARY OF STATE to VICEROY, 6th February 1897.

Your telegram of 4th February. Have consulted Local Government Board. Their two best men not available. They cannot recommend any inspector with sufficient experience and weight for proposed duty. They advise employment of Dr. Lowson on this work. He has been at Hong Kong advising about buildings with reference to plague. His experience is unique. Local Government Board say he would be more effective than any officer they could send. Do you agree? Lowson left for Bombay on plague duty yesterday.

From GOVERNOR, BOMBAY, 7th February 1897.

In continuation of previous telegram of 1st February. Deaths from all causes in Bombay City for the week ended 1st January, 1,853; 8th January, 1,665; 15th January, 1,728; 22nd January, 1,740; 29th January, 1,398; 5th February, 1,797. Reported plague deaths in corresponding periods, same order, 401, 333, 373, 503, 401, 617.

Increased plague deaths due in part to improved reporting. Plague is diminishing where formerly most prevalent, but extending north. The removal of healthy people from houses where cases appear to be concentrated carried out, and houses limewashed and opened to sunlight. Deserted houses being cleansed. Magistrate moved to condemn dwellings unfit for habitation; has condemned some; notice has been given of many others. Fuller powers being taken under Section 434 for evacuating infected houses, preventing use of deserted houses, and treating houses unfit for habitation. Poona, 43 indigenous cases during past week; no indigenous cases in cantonment. Thana district, plague continues endemic in Bandora, Coorla, and Bhiwandi. Karachi, plague deaths for the week ended 6th February, 314; health camp remains healthy. People becoming more amenable, except Mahommadans. Karachi Municipality intend to enforce evacuation of infected houses. Plague has not become endemic in any new places during past week throughout presidency. Inspection made of arrivals by rail, road, and sea. Preparations made for treatment of cases discovered and for isolation, and disinfecting houses. Authorities everywhere on alert to prevent outbreak or spread of plague. New Act will give extensive powers, which will be useful for inspection of travellers, segregation of sick, especially in Poona, Karachi and Thana district.

From SECRETARY OF STATE to VICEROY, 8th February 1897.

Turkish Consul, Karachi, reported that Arab sailing boats carried plague from Karachi to Basrah without hindrance by local authorities, and no information about plague was given to him, while newspapers were forbidden to publish facts. Matter may come up at Venice. Please telegraph your remarks.

From VICEROY, 12th February 1897.

Your telegram of 6th February. In view of apparent connection between structure of buildings at Bombay and progress of plague, we, and also Government of Bombay, consider it is very important to have opinion of expert Local Government Board Inspector. His opinion would carry greater weight than Lowson's. Would it not be possible for one of the best men under Local Government Board, though not available at present, to be shortly made available?

From SECRETARY OF STATE to GOVERNOR, BOMBAY, 12th February 1897.

Please telegraph latest information about trial of protective inoculation against plague. Parliamentary question Monday.

From SECRETARY OF STATE to VICEROY, 12th February 1897.

(Telegraphic.)

I am doubtful whether pilgrimage should continue from Madras or other Indian ports. All pilgrimage has been stopped by the French Government from Moslem countries under their control, and this measure will be proposed at the Venice Conference for adoption by other Powers. It seems advisable to anticipate the almost certain verdict of the Conference on this matter. Please give the subject careful consideration, and telegraph your views.

From GOVERNOR, BOMBAY, 13th February 1897.

Your telegram of yesterday. Only reliable inoculation figures are from House of Correction, Bombay, where there were 11 attacks with six deaths in average daily population of 173$\frac{3}{7}$ among uninoculated; two attacks, no deaths, in average daily population of 148$\frac{3}{7}$ among inoculated during same period. This excludes attacks and deaths occurring within 24 hours of inoculation, as these probably had the disease on them before the operation. Up to date, 512 inoculations in all; from among them no attacks have been reported except the two in the jail. Speaking generally, inoculation appears to afford considerable protection, but sufficient time not elapsed yet to estimate degree, or how long it will continue.

From GOVERNOR, BOMBAY, 14th February 1897.

In continuation of previous telegram of 7th February. Deaths from all causes in Bombay City for week ended 12th February, 1,835; reported plague deaths, 813. Plague has been to some extent checked where first prevalent. Mandvi now almost free from disease. In Bombay City general tendency to extend north continues. House-to-house visitation active, 218 dwellings condemned as uninhabitable, 31 recommended for alterations, tiles removed from 3,141, earth floors dug up in 581, and 2,277 lime-washed, 171 vacated, and 35 have been destroyed by fire during past week. Under Epidemic Diseases Act Government have empowered Municipal Commissioner, of his own authority, and without reference to the magistrate, (i) to prohibit use of dwellings unfit for habitation; (ii) to require abatement of overcrowding; (iii) to require vacation of buildings and premises for cleansing and disinfecting; (iv) to forcibly enter deserted buildings and cleanse and disinfect them; (v) to remove earth of floors; (vi) to cut off water connections; (vii) to demolish whole or part of buildings unfit for habitation or dangerous to health; (viii) to destroy infected bedding, clothing, &c. Arrangements have been made for emptying all outgoing trains at stations outside Bombay, and for strict medical inspection of all passengers. One indigenous case occurred Poona Cantonment, where conservancy and cleansing operations had been greatly improved and every precaution taken. In Poona City increase from 43 to 47 cases during week, but concentrated in certain quarters, and hitherto no tendency to spread observed; general cleansing disinfecting operations active; infected houses vacated, disinfected and opened to sun and air; segregation camp for inmates ready, but not willingly resorted to; they prefer leaving Poona. Difficulty in inducing declaration of cases and removal to hospital. In Coorla cases diminished; in Bandora and Bhiwandi, and also in rest of Thana district, cases increased; in Surat district local cases reported from two villages. Possibilities of extension of plague to new localities very carefully watched, and all local officers on alert. Karachi, correct number plague deaths for week ended 12th February, 269; 5th February, 297; 29th January, 181; 22nd January, 206. Mortality chiefly concentrated in poorest Mohammadan quarter, and there some difficulty found in detecting cases. Mohammadan officials at work among them. Six hundred Mohammadans gone into health camp; infected huts burnt or pulled down. Hindu health camp doing well; evacuation of infected houses enforced, and re-occupation not allowed. No indigenous cases in Sind outside Karachi. Extensive powers given to all district officers under Epidemic Diseases Act.

From VICEROY, 15th February 1897.

Your telegram of 4th February. Plague deaths on pilgrim ship. We have received the following information from Government of Bombay and British Consul at Jedda:—The only deaths that have occurred are the two on steamer "Pekin," mentioned in your telegram of 12th January. Government of Bombay state cases occurred 2nd January and 5th January respectively; second case seven days incubation. No spread on board. British Consul at Jedda states both cases occurred at Bombay harbour.

From VICEROY, 16th February 1897.

Your telegram of 8th February. Report of Turkish Consul, Karachi. Government of Bombay repeat following telegram received from Commissioner in Sind, dated 10th February :—" Native craft do not apply (for) bills of health, but are inspected by Port Health Officer. Since 21st no cases of plague left Karachi as far as is known. No information solicited by Turkish Consul, even when visiting Commissioner. Full figures of mortality supplied to press daily from beginning. Press have published all details. Nothing to conceal." Also following, dated 11th February :—" Port Health Officer reports no cases of plague left Karachi for Basrah since 10th December; and since 17th December, when plague officially declared, existence of plague with total plague deaths of antecedent week has been certified in bills of health to vessels leaving Karachi."

From VICEROY, 17th February 1897.

(Telegraphic.)

Your telegram of 12th. After consulting the Local Governments we have carefully considered the question of forbidding all pilgrimage from India for this year. We have under the Epidemic Diseases Act prohibited the departure of pilgrims who may reside in Bombay or Sind; also of others who may have gone to the western ports for embarkation ; and we are taking effectual steps to send to their homes, after 10 days quarantine, at the public cost, all intending pilgrims who have entered Bombay from elsewhere. Stringent measures have also been ordered to prevent pilgrims from other provinces entering the Western Presidency. Stoppage of pilgrimage from plague-stricken ports and tracts is in accordance with the religion of Islam, which deprecates pilgrimage from places where disease is epidemic. The majority of my Government are of opinion that it would be inexpedient to stop pilgrimage altogether, because our action, unless Turkey also issued similar orders, would assuredly be misconstrued, and possibly cause serious dicontent, and also because a precedent would be created, which might enable other Powers to press for similar action hereafter when an outbreak of cholera occurred in any part of India. At present Calcutta and Madras are the only ports open for embarkation of pilgrims. The two Local Governments, and the mercantile community in both places, urge that these ports should also be closed for pilgrims. On the other hand, the majority of my Government are agreed that a complete stoppage of pilgrimage is not necessary, provided that stringent precautions are taken against plague-stricken ports and against departure of any pilgrims not absolutely free from taint of plague. To this end we propose that Local Governments outside Bombay should detain all intending pilgrims for seven days in camps of observation ; steamer tickets for pilgrims should be obtainable only at these camps, and that no pilgrim should depart who has not been taken by rail from the camps direct to the steamer and straightway put on board, arrangements being made that pilgrim trains *en route* should not be stopped at any station near a large centre of population. The adoption of these measures will, we hope, satisfy other nations that the departure of pilgrims from India will, under the restrictions which we shall enforce, leave no ground for objection.

From SECRETARY OF STATE to VICEROY, 18th February 1897.

(Telegraphic.)

Your telegram of 17th February. After full consideration of the objections to the stoppage of pilgrimage as set forth by the majority of your Government, even if the proposed precautions were really effective, I attach importance to the public feeling in Calcutta and Madras, and to the very decided views of European Powers, who will not be content unless pilgrimage from India is altogether stopped for the time, and who will, if this is not done, assuredly impose strict quarantine against all India. On these grounds, and because early action seems advisable, Her Majesty's Government have come to the decision that all Moslem pilgrimage from India must, for the present, be suspended. I deplore the risk of dissatisfaction being caused by these orders, which, however, appear to be absolutely necessary. Please notify the decision in such way as you may deem best, and telegraph the date from which pilgrimage will be stopped. Endeavours will doubtless be made to inform intending pilgrims on frontier, and to stop them near their homes, so that large bodies of them may not be collected together.

From VICEROY, 19th February 1897.

(Telegraphic.)

Your telegram of 18th February. Was the Porte one of the Powers to whom you refer? If such was the case, our orders stopping pilgrimage might be more acceptable to Moslems. Our orders will be published when your answer on this point arrives. No pilgrims are at present leaving India.

From SECRETARY OF STATE to VICEROY, 19th February 1897.

(Telegraphic.)

Your message of 19th February. Equally with other Powers, the Porte insists on extreme precautions against plague, but the Sultan's Government has not urged that India should stop all pilgrimage. My previous telegrams have informed you regarding Turkey's quarantine precautions.

From VICEROY, 20th February 1897.

Your telegram of 18th February. Pilgrimage. Notification will issue to-day. Local Governments have been instructed to make every effort to stop pilgrims on frontier or near homes, so that they may not gather in large bodies.

From GOVERNOR, Bombay, 21st February 1897.

In continuation of previous telegram of 14th February. Deaths from all causes in Bombay City for the week ending 19th February, 1,772. Reported plague deaths, 843. True number of reported plague deaths previous week 847, not 813. Activity of the plague continues greatest in northern portions of city. For the week ending 18th February, 257 dwellings condemned, 166 recommended for alteration, tiles removed from 1,271, floors dug up in 792, and 2,063 lime-washed, 724 vacated, and 18 have been destroyed by fire. Two new hospitals are being prepared. Emptying of trains from Bombay and inspection of passengers throughout during past week at Palghar, B. B. & C. I. Railway, and Kalyan, G. I. P. Railway; 67 detained suspected at Kalyan, 11 at Palghar. Of former 10, of latter 2, died. Yersin was to leave Annam for Bombay 19th. Poona Cantonment, one indigenous case during past week. In Poona City the returns show no increase, and precautionary and arrestive measures are more active. In Coorla, Bandora, Bhiwandi and rest of Thana district, cases have increased in numbers, but not spread to fresh places. Under Epidemic Diseases Act, local officers are empowered to inspect arrivals, by road or at railway stations and landing places and detain any suspected case for medical examination, to enter houses and detain for medical examination cases therein found. Medical officers are empowered to detain and segregate in places specially provided persons suffering from or suspected of plague. Local officers have power to cause evacuation of houses, to order abatement of over-crowding, to cleanse and disinfect buildings, to burn insanitary huts, to regulate burials, and destroy infected goods and clothes. It is also ordered that all cases must be reported. These rules are applicable generally, and are being worked in Thana district. House-to-house visitations are being organised, sick are being removed to hospitals, and other occupants of infected houses segregated. Of the two Surat villages, attack subsiding in one, increased in the other. A slight outbreak occurred in isolated quarter of Ahmedabad, which was promptly taken in hand and, it is believed, suppressed. Elsewhere, from a few scattered places, occasional cases, said to be indigenous, are reported. They appear to be derived from persons coming from infected towns, and so far there is no indication of further spread of disease. Karachi plague deaths for the week ending 19th February, 235. In Karachi slight tendency for the plague to spread, but diminishing in quarters where formerly worst, except poorest Mohammadan quarter. Activity of measures against plague at Karachi continues. The cleansing and disinfecting of houses besides those that are infected is progressing. Six indigenous cases were found to have occurred in Sind outside Karachi. Five in one place occurred three weeks ago, one at Sukkur more recently. No other indication of spread of disease in Sind. Travellers from Karachi very carefully watched, and cases of plague taken from Karachi to other places promptly and effectively dealt with.

From SECRETARY OF STATE to VICEROY, 24th February 1897.

Your telegram of 20th February. Has notification regarding pilgrimage been published? From what date does it take effect?

From VICEROY, 25th February 1897.

Your telegram of 24th February. Notification regarding suspension of pilgrimage was published on 20th February, and took effect at once. All intending pilgrims are being conveyed back to their homes.

From VICEROY, 26th February 1897.

Our telegram of 25th February. Notification regarding suspension of pilgrimage was to following effect:—The question of the suspension of pilgrimage having been under the consideration of the Government of India and Her Majesty's Government, Her Majesty's Government have now come to conclusion that, in consequence of the strong opinion of all European Governments, including Turkish Government, as regards danger of plague being communicated to Europe, it is impossible to meet their demands by measure short of suspension of pilgrimage for time being. Governor General of India in Council therefore orders, under Epidemic Diseases Act, pilgrimage be suspended altogether for current season.

From GOVERNOR, Bombay, 1st March 1897.

In continuation of previous telegram of 21st February. Deaths from all causes in Bombay city for the week ended 26th February, 1,525; reported plague deaths, 730. For the week ended 25th February, 102 dwellings condemned, 130 recommended for alterations, tiles removed from 1,216, floors dug up in 604, and 2,029 limewashed, 393 vacated, and 38 have been destroyed by fire, and several otherwise demolished. The distinct reduction of the total number of deaths a satisfactory sign, but some of the people who left Bombay are now returning from infected places outside, and have re-infected places which had become almost free. People entering Bombay as well as leaving will have to be examined and watched, and steps to this end are being taken. The two new hospitals are opened. Similar steps will have to be taken in regard to people leaving Poona, where plague much worse than was feared, and has rapidly increased. It has, so far, been found impossible to get an accurate statement of deaths from plague in Poona, but in January deaths from all causes were 497, against quinquennial average of 261. Up to 26th February deaths were 882, against quinquennial average of 225. The most drastic measures will be enforced, and aid of military called in. In the Thana and Surat districts plague shows tendency to spread. Plague still severe in Coorla, Bandora, and Bhiwandi. Elsewhere in the presidency proper the only local cases reported for the week ended 26th February were, in Ahmednagar district, three cases, three deaths; Satara district, 14 cases, seven deaths; Ratnagiri district, five cases, five deaths; Colaba district, 14 cases, five deaths; Kathiawar district, two cases, one death; Kolhapur district, one case, one death; Cutch district, nine cases, no deaths. Three quarantine camps established at railway stations in Sholapur district. Fairs and pilgrimages in Bombay Presidency being stopped where necessary. Karachi, plague deaths for the week ended 26th February, 205. Effectiveness of measures taken increasing; opposition of people diminishing. No indication of general spread of plague in Sind.

From SECRETARY OF STATE to GOVERNOR, Bombay, 6th March 1897.

Plague. Please report by telegraph results of inoculation as far as known up to date and what arrangements made for its extension. Has Yersin begun work? Inform Haffkine have heard with much regret of his illness. Report as to his progress.

From GOVERNOR, BOMBAY, 7th March 1897

In continuation of previous telegram of 1st March. Deaths from all causes in Bombay city for week ended 5th March, 1,370; reported plague deaths, 635. For week ended 4th March 397 dwellings condemned, 115 recommended for alterations, tiles removed from 931, floors dug up in 560, and 1,727 limewashed, 210 vacated, and 46 have been destroyed by fire. Notification issued under Epidemic Diseases Act places carrying out of measures to suppress and prevent spread of plague in Bombay city in the hands of executive committee of four, who are rapidly organising improved and extended staff for house-to-house visitation, and general health department; also organising large extension of hospitals with segregation camps attached for occupants of infected rooms and houses, and measures for removal thereto of sick and probably infected. Details sent by mail of 7th March. In Poona plague still very prevalent and no sign of diminution. For Poona municipal and cantonment areas executive committee arranged, who are organising complete scheme for house-to-house visitation, hospital and segregation camps, and removal thereto of sick and probably infected. They hope to begin work shortly. I go to Poona to-night to personally see to the arrangements. In worst affected places in Thana district, namely Bandora, Coorla, and Bhiwandi, active measures under European supervision have been in force for more than a week. In Bandora the number of cases has decreased; in Coorla and Bhiwandi increased. Plague has newly appeared in five more villages in Thana district, but total number of reported cases in the district very slightly exceeds those of previous weeks. In Surat district the number of cases and of places affected both increased; elsewhere in the Presidency proper the only local cases for week ended 5th March were:—In Satara district 13 cases 11 deaths, in Ratnagari district 3 cases 2 deaths, in Kolaba district 25 cases 20 deaths, in Kathiawar district 2 cases 1 death, in Baroda district 16 cases 13 deaths. Railway inspection in force at Ahmedabad, Bhusawal, Dhond, Hotgi, Londa, as well as Kalyan and Palghar. Karachi plague deaths for week 200; local cases have occurred at Sukkur; elsewhere in Sind no further indications of spread. In Karachi more patients are being taken to hospitals.

From GOVERNOR, BOMBAY, 7th March 1897.

Your telegram of yesterday. Plague. Including to-day, 2,341 persons inoculated; of these 154, as previously reported, were in gaol; of the remaining 2,187 only two attacked by plague up to date, and both within five days of inoculation; both are alive. People are coming forward more freely to be inoculated, and the practice is extending. Yersin began work yesterday. Effect on those only a day or two ill surprisingly good, cases of old standing not so much benefited. It is Hankin, the Agra bacteriologist, not Haffkine, who contracted plague. Hankin has recovered.

From SECRETARY OF STATE to GOVERNOR, BOMBAY, 9th March 1897

Your telegram of 7th instant. Inoculation. You have not answered question in my telegram of 6th instant:—"What arrangements made for extension?" I think it most important that Government should give every facility, and should take all possible measures to induce threatened population to undergo inoculation. Please report specially as to this in weekly telegrams, and give every week number of inoculations and results as far as known. Parliamentary question on Thursday.

From GOVERNOR, BOMBAY, 10th March 1897.

Your telegram of yesterday. Inoculation. I am preparing organisation for extension of inoculating depôts, for instructing medical officers in inoculation, for popularising it, and increasing amount of prophylactic lymph that can be produced. Will send figures and information weekly.

From the GOVERNMENT OF INDIA to the SECRETARY OF STATE FOR INDIA.

(Sanitary, No. 1.)

MY LORD, Calcutta, January 27, 1897.

IN continuation of our telegram of the 20th instant, we have the honour to forward, for your Lordship's information, an account of the measures which have been taken against the outbreak of bubonic plague which has, unfortunately, occurred in this country.

2. The first official intimation of the outbreak which reached us was in a telegram from the Government of Bombay, dated the 29th September 1896. The disease was then reported to be of a mild type, and at first it showed no tendency to increase. A statement is appended to this Despatch showing the number of seizures and deaths in the city of Bombay which have been reported day by day from the beginning of October up to the present time. Throughout the months of October and November the disease made little or no progress, and the number of deaths reported a day averaged nine. Early in December there was a marked increase, and the number of deaths reported daily from the 2nd to the 23rd (inclusive) was about 32. From the 24th December onwards there was another marked increase, and the number of deaths reported from that date to the 14th January (inclusive) averaged about 51. The next week shows a further increase, the reported number of deaths averaging 74 a day. The total number of deaths reported during October was 276; during November, 268; during December, 1,160; and from the 1st to the 25th January, 1,444. The total number of deaths reported from the beginning of the outbreak thus amounts to 3,148. We have reason to fear that all deaths from the plague have not been reported as such, and that the true mortality from the disease is higher than is shown by the above figures. We append to this Despatch a statement comparing the total number of deaths in the city of Bombay during each week from the beginning of October last with the average number during the corresponding period of the preceding five years. Ever since the outbreak of the plague the rate of mortality has been exceedingly high, particularly from diseases connected with the respiratory organs. The number of deaths increased largely from the beginning of December, and again from the beginning of the fourth week of that month. From the beginning of October until the end of November the average daily mortality was 98, compared with a normal mortality of 64; during the first three weeks of December, 176, against a normal mortality of 63; and from the 23rd December to the 5th January, 251, against a normal mortality of 66. In considering these figures it has further to be remembered that the population of the city has been much diminished by the very large emigration that has taken place. The mortality from the disease has reached a very high figure in the town and island of Bombay, the alarm among the inhabitants of the city is great, and the effect on the business and trade of the town has been, and continues to be, very serious.

3. For a considerable time, except for a few imported cases in some towns in Gujarat, the outbreak was confined to Bombay itself, but on the 23rd of December we learnt from the Government of Bombay that the plague had broken out in Karachi. In reply to our telegrams calling for more particular information, we subsequently learnt that 39 seizures and 38 deaths had occurred from the 10th to the 26th December. Very few new cases were reported until the commencement of January, when the number of cases began to increase, and the daily mortality has now reached a high figure, amounting to a daily average of 29 for the week ending 20th January 1897. A statement is appended to this Despatch showing the daily seizures and deaths. The total number of deaths that have been reported in Karachi, from the beginning of the outbreak up to the 24th January, is 608. It will be observed that the disease has been very malignant in Karachi, and that almost all the cases reported have been fatal.

4. Bombay and Karachi are the only places in which the disease can be said with certainty to have as yet assumed an endemic form. But a number of cases have been discovered in other places in the Bombay Presidency and in the Baroda State, and isolated cases have occurred at a few other places beyond the limits of the Bombay Presidency. The large emigration of people from the infected quarters to the surrounding country could not fail to be accompanied by the occurrence of such cases. A statement is appended to this Despatch showing in tabular form the seizures that have been

reported from places outside Bombay and Karachi. The largest number have been discovered in Thana (which is situated 21 miles north-east of Bombay), and in Poona and Ahmedabad, which are in direct and constant communication with Bombay. In Ahmedabad the cases were mostly imported in the middle and at the end of December and in the beginning of January.

5. The remedial and preventive measures that have been adopted fall under three main heads:—

(1.) Medical and sanitary measures at the places where the outbreak has occurred.

(2.) Measures to prevent the spread of the disease by sea.

(3.) Measures to prevent the spread of the disease by land.

6. As soon as the Surgeon General with the Government of Bombay reported to that Government that he had seen cases of a mild type of bubonic plague in the city, preventive measures were adopted and a Committee of medical experts were appointed to report on the disease and the situation. The Municipal Corporation have from the outset required the infected quarters to undergo a thorough and systematic cleaning and disinfection; and they have also pushed on vigorously other sanitary measures, such as the improvement of house connections and the construction of surface drains in quarters where the drainage was defective. A house-to-house visitation by medical officers has also been instituted. The Corporation have sanctioned liberal measures towards these ends, and the executive officers have displayed great energy in carrying them out. The Government of Bombay have given your Lordship a summary of the measures they have caused to be adopted in Bombay, Karachi and Poona in their telegram of the 22nd instant.

7. On the 2nd of January we deputed Surgeon Major-General Cleghorn, our Sanitary Commissioner, to visit Bombay, in order that he might render what assistance he could, and that he might inform himself fully on the situation of affairs. Dr. Cleghorn made a thorough investigation of the infected quarters, and called an informal meeting of the principal medical practitioners and the members of the special Medical Committee appointed by the Government of Bombay. These gentlemen have recorded a memorandum stating their opinion that the plague now prevailing in the city is only slightly, and under certain conditions, infectious or contagious; that its incidence is largely due to local causes, and that the only effective way, combined with the measures which are at present in operation, of arresting the progress of the disease, is to insist on the evacuation of houses in which cases of plague have occurred. A copy of this memorandum is forwarded for your Lordship's information. Dr. Cleghorn agrees entirely with the views expressed in the memorandum, and we forward a note* on the subject which he has drawn up and presented to us. In this note Dr. Cleghorn also lays stress on the opinion that it is only by the extension and perfection of sanitary measures that the disease can be eradicated from the city, and he describes the insanitary condition of the crowded tenements in which a large portion of the native inhabitants of the town dwell. The facts reported in this note afford additional evidence of the importance of removing the healthy from infected buildings, and in the first place of thoroughly cleansing and disinfecting these buildings, and then of permanently improving their condition. In the letter† from our Home Secretary, which forms an enclosure of this despatch, we have informed the Government of Bombay that we consider it necessary that the plan of removing all persons from infected houses, and thoroughly cleansing and disinfecting the buildings, should be carried out, and we have asked His Excellency in Council, if he agrees, to report the measures that are adopted to bring the plan into general effect. The principal difficulty in carrying out the scheme will be the provision of suitable temporary accommodation for the families who are removed. It must be conveniently arranged and sufficiently comfortable, but we do not doubt that the Government of Bombay will carry out this necessary measure without loss of time. We have also asked the Government of Bombay whether they consider it necessary to amend the building regulations of the city, and to take increased power to prevent the overcrowding and insanitary conditions of the tenements to which we have alluded above, and we have suggested that the Local Government should add to the strength of the Health Department of the city by deputing two of their Deputy Sanitary

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* Note by Director General, Indian Medical Service, dated 16th January 1897.

† Letter No. 45, dated 19th January 1897, from the Government of India, Home Department, to the Government of Bombay.

commissioners to act under the orders of the Health Officer. At the instance of the Government of Bombay, further help is being given by the deputation of twenty military assistant surgeons and senior hospital assistants to assist in the house-to-house visitation and the sanitary operations.

8. M. Haffkine, the eminent bacteriologist, who has been for some time pursuing his investigations as to inoculation against cholera, was deputed to Bombay as soon as the first substantial rumour of the outbreak of plague was received. He was appointed a member of the special medical board, and has been in the city throughout the period of the plague. Mr. Hankin, the chemical examiner and bacteriologist for the North Western Provinces and Oudh, another expert in bacteriology, was also sent to Bombay, and has been working as a member of the special medical board. Mr. Hankin has been specially engaged on questions connected with the plague bacillus in nature, in the surrounding water, soil, articles, &c. M. Haffkine has been engaged in the study of the microbe itself, its effects on human and animal bodies, and the questions of immunity, protective inoculation and treatment, and he is now preparing serum for protective and therapeutic purposes. He is not yet in a position to state when the serum will be ready for issue, but he has already begun to make experiments with it. In the case of the serum prepared by M. Yersin, six months was, we are informed, required to perfect it. M. Haffkine thinks, however, that he has discovered a process by which it will be effective after three months, but on this point he is as yet undecided. It is hoped that M. Yersin will shortly be able to provide a supply of serum. M. Haffkine has now reported that he has discovered different media which give rich cultures of the plague bacillus, that these cultures can be deprived of their noxious properties while retaining the power of protecting the system against fatal infection, and that he is in hopes that inoculation by means of such cultures, the microbes in them having been destroyed, will increase the resistance of man against the disease. He has subjected himself to inoculation.

9. When the disease broke out in Karachi, we suggested, on the advice of our Sanitary Commissioner, that the houses in which cases of plague occurred should be burnt down. The disease being, we understood, localised, it appeared to us possible that the destruction of houses in the localities in which it occurred might be carried out without difficulty and without much expense. But the Government of Bombay have reported that the municipal authorities, while they had ordered the demolition of earthen huts in which cases of plague had occurred, hesitated on the ground of the very great expense involved, about ordering the destruction of masonry houses. We have now asked the Government of Bombay to adopt in Karachi, as in Bombay, the plan of removing the healthy from the infected houses. The municipality have already taken steps for the formation of camps away from the infected quarters. The Government of Bombay are, at our suggestion, sending their Sanitary Commissioner to take over charge of the sanitary management of the city, and they have already deputed one of their Deputy Sanitary Commissioners to the place. The local authorities at Karachi are less able to deal with the emergency than are the local authorities at Bombay. Dr. Cleghorn is at present at Karachi, and we are awaiting his report on the situation.

10. At Poona advantage was taken in October last of the powers conferred on the Governor General in Council by Section 25 of the Cantonments Act, 1889, to extend the provisions of Sections 434 (1) and 473 of the City of Bombay Municipal Act, 1888, to the cantonment with a view to protect it against the plague. These sections authorise any special measures and regulations that are deemed necessary to be made and framed to prevent the outbreak and spread of disease. Orders are now being issued extending the provisions of the same sections to the cantonments of Kirki, Ahmedabad, and Deesa, and the Government of Bombay have been asked whether a similar course should be followed in any other cantonments. Special legislation would be required to extend the operation of these sections to towns other than cantonments. We await a reply from the Government of Bombay as to whether they consider such legislation to be necessary. This matter is alluded to in your Lordship's telegram of the 18th instant, and in our reply of the 20th.

11. The best practicable means of combating the spread of the plague by land appear to us to be the detection at the railway stations and isolation of cases occurring among passengers by rail, and we have caused extensive measures to be adopted with this end. In October last orders issued for the medical inspection of passengers in co-operation with the railway authorities under Sections 47 and 71 of the Indian Railways Act, 1890,

at important stations along the main lines from Bombay. At the end of December similar orders were issued with respect to stations along the lines from Karachi. Medical officers are now posted at the principal railway stations along all main lines connected with the two places, and the cases discovered are treated in hospitals or in sheds constructed for the purpose. Special instructions have been issued from our Home Department to all the local governments and administrations, and from the Public Works Department to the railway authorities. The instructions issued by the railway authorities include measures for the disinfection of carriages. Up to the present time the cases detected have occurred mainly in the Bombay Presidency. Here the orders appear to have been well carried out, and numerous cases have been isolated and treated. We have asked the Government of Bombay to report for our information the details of their instructions, and whether they are working smoothly and well. The Government of the Punjab* has prepared a carefully-considered set of rules for the stations in that province, copies of which are appended to this Despatch. These rules provide adequately for the place, time, and manner of the inspection, the nature of the inspection, and the isolation and treatment of suspected and declared cases. The rules have been circulated for general guidance as well as a special set of rules,† which are also forwarded with this despatch, for the treatment of European and Eurasian passengers.

The Government of the North Western Provinces and Oudh have taken proper steps for the detection of plague cases at Saharanpur and Ghaziabad, where the railway from Karachi connects with the other railways in those Provinces,‡ and the Government of Bengal is causing the approaches to Calcutta§ to be watched. Copies of the letters from these Governments are forwarded with this Despatch. Other local governments and administrations have been asked to report the details of their arangements.

12. Your Lordship will observe that in the letter of the Government of Bengal of the 14th January, the Lieutenant Governor comments on the insanitary condition of the town of Calcutta. Towards the end of October some suspected cases of plague occurred in Howrah and Calcutta. It was subsequently demonstrated that these were not cases of plague, but as soon as the suspicion of an outbreak arose the Local Government appointed a special Medical Board, which made a thorough sanitary inspection of the town. We forward for your Lordship's information a copy of the resolution of the Lieutenant-Governor of Bengal appointing the medical board, and of the note by the board regarding the reported cases of plague which were shown not to be true cases. No other cases have been brought to notice. The board presented a most unfavourable report (of which we enclose a copy) regarding the sanitary condition of the town, and Sir Alexander Mackenzie has urged the Corporation to take immediate action to improve it. We have informed the Government of Bengal that we fully agree that it is most important, in view of the possibility of plague, to remove the present insanitary conditions, and we have asked for a report on the measures taken with this object.

13. To prevent the spread of the disease by seaborne traffic quarantine has been imposed at the principal Indian ports. On the 6th of October the Government of Bombay informed us that quarantine had been imposed at Alexandria, and asked for sanction to the imposition of quarantine at Aden. On the 7th, after receiving our sanction, the Government of Bombay issued rules for the Aden ports against arrival from Bombay. The rules are similar to those imposed in July 1894 on the occurrence of the Hong Kong Plague. Rules were then issued against arrivals from Bombay for Karachi with effect from the 13th, for Rangoon with effect from the 20th, for Calcutta with effect from the 21st, and for Madras with effect from the 28th. Copies of the rules are forwarded for your Lordship's information. With some slight modifications the rules follow the rules of 1894, and at the last three ports named they recognise pratique at Colombo. It was at the time discussed whether quarantine should also be imposed at the minor ports, but it was decided that the danger of the disease spreading by means of the coasting trade to the smaller ports was not sufficient to necessitate this course.

On the 29th December, after obtaining particulars of the outbreak at Karachi, and on hearing that the Sanitary Board at Alexandria had established plague regulations against arrivals from Karachi, we sanctioned the imposition of quarantine against Karachi at the

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* Letter from the Punjab Government, No. 19, dated 8th January 1897.

† Letter from the Punjab Government, No. 42, dated 16th January 1897.

‡ Letter from the Government of the North Western Provinces and Oudh, No. 18 (Sanitary), dated the 20th January 1897.

§ Letter No. 199 (Medical), dated 14th January 1897, from the Secretary to the Government of Bengal.

Aden ports; and on the 30th we directed the Local Governments concerned to issue quarantine rules against Karachi, similar to the rules against Bombay, for Calcutta, Madras, and Rangoon. Inasmuch as both Bombay and Karachi are now infected, we consider that the continuance of quarantine at Karachi against Bombay is unnecessary, but shall insist on adequate medical inspection being made of all ships which arrive at Karachi from Bombay.

On the 6th instant the Government of Madras asked that quarantine might also be imposed at the port of Tuticorin, which is occasionally visited by steamers from Bombay and Karachi, and their proposal was duly sanctioned.

On the 18th instant, at the instance of the Chief Commissioner of Burma, we sanctioned the imposition of quarantine rules against Bombay and Karachi at the ports of Moulmein, Akyab, and Bassein. The advent of the grain export season brings vessels from the Bombay ports to these places.

14. Another matter which has engaged our attention in connection with the sea-borne trade is the import of rags and second-hand clothing from the infected ports. There is some traffic in these articles, especially from Bombay, and on one occasion the authorities at Calcutta considered it necessary to destroy a shipment of rags. The Government of Bengal has asked for protection against the danger, and as we consider that the trade forms a possible source of infection, we have prohibited the import by sea of rags and second-hand clothing from Bombay and Karachi to Calcutta, Madras, and Rangoon. The prohibition has been issued under the Sea Customs Act, 1878.

15. In conclusion, we desire to notice the closing of the ports of Bombay and Karachi to the pilgrim traffic. The telegraphic correspondence quoted below* has taken place between your Lordship and ourselves on this subject. We were reluctant to close the infected ports to pilgrim ships, as this course cannot fail to occasion inconvenience and concern to the Muhammadans of India. But we agree with your Lordship that the condition of affairs in Bombay and Karachi make it imperative to direct that these places shall not for the present be used as a rendezvous for pilgrims, and this view is shared by the Government of Bombay and our Sanitary Commissioner. We have instructed the Government of Bombay accordingly, and they have issued a notification declaring that the ports of Bombay and Karachi shall not, from the 1st February and until further orders, be ports from which pilgrim ships may depart or proceed as provided for in Section 7 (1) of the Pilgrim Ships Act, XIV of 1895. We are causing the widest publicity to be given to this decision through Local Governments and Administrations and our agents at Native States, as well as through the public press and by means of notices posted at all the principal railway stations. And though we could not contemplate an absolute prohibition of the pilgrimage, we are taking measures to dissuade intending pilgrims from proceeding to the Hedjaz this year. We have ascertained from the Government of Bombay that there are no other British ports on the Bombay coast from which pilgrim ships could depart, but Calcutta remains open to the pilgrim traffic, and the Government of Madras are, at our request, about to declare Madras to be a port for the departure and arrival of pilgrim ships. We are taking means to ensure that it shall be widely known from what ports pilgrim vessels may still proceed, and we have

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* *Telegram from Secretary of State, dated January* 5, 1897.—"Egypt is discouraging pilgrims going Mecca in view of danger plague and asking whether India would similarly discourage pilgrims. Please telegraph if you propose action of the kind."

Telegram from Secretary of State, dated January 12, 1897.—"My telegram of 5th January last. Two plague deaths reported among pilgrims steamer "Pekin" from Bombay during voyage."

Telegram from Secretary of State, dated January 14, 1897.—"My two telegrams about plague and Moslem pilgrims. Russia now presses Her Majesty's Government to prohibit pilgrimage from India during this year. Turkey on religious grounds declines to prohibit. Austria apparently shares Russian fears. Under present circumstances Bombay is not good rendezvous. Please telegraph reply as quickly as possible in order to give Russia."

Telegram from Secretary of State, dated January 18, 1897.—"Have considered Bombay plague and have issued instructions to Bombay who will repeat if thought desirable. Meanwhile on following matters of general applications we suggest first Moslem pilgrimage from infected Indian ports should be stopped for the present year. Full information being published in provinces of and outside India, whence pilgrims go through Bombay."

Telegram to Secretary of State, dated January 20, 1897.—"Your telegram of 18th to us and Bombay Government. Latter will reply on four points referred to it. We are arranging that Bombay and Karachi shall cease to be ports for departure of pilgrim ships from 1st February. Widest publicity will be given to this decision as you suggest. Bombay Government estimate that one quarter of pilgrims who leave Bombay are Russian subjects, and urge that Russia should be asked to exert her influence to prevent their coming through Arabia to India. We trust Her Majesty's Government will adopt suggestion."

requested the Government of Bombay to give information on the subject to the persons interested in the Red Sea traffic. We have also warned the Government of Bengal that it may be necessary for the authorities at Calcutta to be prepared for an influx of pilgrims. In a telegram dated the 22nd instant we informed your Lordship that it was possible that an endeavour might be made to embark pilgrims from Goa, and we asked your Lordship to move Her Majesty's Government to communicate this information to the Portuguese Government, with a view to obtaining their concurrence.

16. We have in the above paragraphs informed your Lordship of the main facts connected with the outbreak of the plague and of the action we have taken in connection with it, and we shall keep your Lordship informed of any further facts which we think should be brought to your notice.

(Signed) Elgin,
&c., &c

Enclosure No. 1.

STATEMENT of Plague Seizures and Deaths in the Town of BOMBAY.

Date.	Seizures.	Deaths.	Date.	Seizures.	Deaths.
	Number.	Number.		Number.	Number.
October 2nd - - - -	21	15	October 18th - - - -	13	10
„ 3rd - - - -	32	15	„ 19th - - - -	19	9
„ 4th - - - -	12	16	„ 20th - - - -	14	9
„ 5th - - - -	16	12	„ 21st - - - -	17	10
„ 6th - - - -	16	18	„ 22nd - - - -	13	11
„ 7th - - - -	17	8	„ 23rd - - - -	17	8
„ 8th - - - -	20	7	„ 24th - - - -	17	13
„ 9th - - - -	8	6	„ 25th - - - -	9	13
„ 10th - - - -	13	6	„ 26th - - - -	10	9
„ 11th - - - -	12	7	„ 27th - - - -	7	13
„ 12th - - - -	5	7	„ 28th - - - -	14	5
„ 13th - - - -	9	4	„ 29th - - - -	9	10
„ 14th - - - -	6	5	„ 30th - - - -	6	1
„ 15th - - - -	10	5	„ 31st - - - -	11	6
„ 16th - - - -	4	8			
„ 17th - - - -	12	10	Total - - -	389	276

STATEMENT of Plague Seizures and Deaths in the Town of BOMBAY.

Date.	Seizures.	Deaths.	Date.	Seizures.	Deaths.
	Number.	Number.		Number.	Number.
November 1st - - - -	11	10	November 17th - - -	12	10
„ 2nd - - - -	10	8	„ 18th - - -	11	7
„ 3rd - - - -	6	10	„ 19th - - -	20	11
„ 4th - - - -	8	5	„ 20th - - -	12	9
„ 5th - - - -	13	10	„ 21st - - -	16	13
„ 6th - - - -	10	9	„ 22nd - - -	11	11
„ 7th - - - -	5	3	„ 23rd - - -	10	13
„ 8th - - - -	16	10	„ 24th - - -	6	8
„ 9th - - - -	10	13	„ 25th - - -	13	11
„ 10th - - - -	12	5	„ 26th - - -	14	10
„ 11th - - - -	10	10	„ 27th - - -	16	14
„ 12th - - - -	4	10	„ 28th - - -	11	6
„ 13th - - - -	10	4	„ 29th - - -	15	11
„ 14th - - - -	9	9	„ 30th - - -	12	7
„ 15th - - - -	9	6			
„ 16th - - - -	11	5	Total - - -	333	268

STATEMENT of Plague Seizures and Deaths in the Town of BOMBAY.

Date.	Seizures.	Deaths.	Date.	Seizures.	Deaths.
	Number.	Number.		Number.	Number.
December 1st - - - -	19	11	December 18th - - -	67	30
" 2nd - - - -	28	20	" 19th - - -	33	36
" 3rd - - - -	21	20	" 20th - - -	44	28
" 4th - - - -	43	23	" 21st - - -	49	26
" 5th - - - -	35	16	" 22nd - - -	66	40
" 6th - - - -	43	28	" 23rd - - -	85	37
" 7th - - - -	28	28	" 24th - - -	75	65
" 8th - - - -	55	37	" 25th - - -	46	49
" 9th - - - -	42	30	" 26th - - -	65	53
" 10th - - - -	49	41	" 27th - - -	73	56
" 11th - - -	51	37	" 28th - - -	95	70
" 12th - - - -	51	35	" 29th - - -	82	60
" 13th - - - -	58	47	" 30th - - -	87	55
" 14th - - - -	44	42	" 31st - - -	72	46
" 15th - - - -	46	29			
" 16th - - - -	44	29			
" 17th - - - -	59	36	Total - - -	1,655	1,160

STATEMENT of Plague Seizures and Deaths in the Town of BOMBAY.

Date. 1.	Seizures. 2.	Deaths. 3.	Date. 1.	Seizures. 2.	Deaths. 3.
1897:			1897:		
January 1st - - - -	62	61	January 19th - - - -	58	63
" 2nd - - - -	78	59	" 20th - - - -	69	75
" 3rd - - - -	50	32	" 21st - - - -	54	69
" 4th - - - -	80	43	" 22nd - - - -	88	70
" 5th - - - -	59	54	" 23rd - - - -	62	63
" 6th - - - -	91	54	" 24th - - - -	62	55
" 7th - - - -	44	49	" 25th - - - -	69	66
" 8th - - - -	87	42			
" 9th - - - -	82	40	Total - - -	1,791	1,444
" 10th - - - -	83	40			
" 11th - - - -	78	57			
" 12th - - - -	102	54			
" 13th - - - -	68	46	Total during October - -	389	276
" 14th - - - -	76	46	" " November - -	333	268
" 15th - - - -	89	90	" " December - -	1,655	1,160
" 16th - - - -	77	100	" up to 25th January - -	1,791	1,444
" 17th - - - -	67	62			
" 18th - - - -	56	54	GRAND TOTAL - -	4,168	3,148

STATEMENT of Plague Seizures and Deaths in the Town of KARACHI.

Date. 1.	Seizures. 2.	Deaths. 3.	Date. 1.	Seizures. 2.	Deaths. 3.	
1896:			1897:			
December 10th to 26th - -	39	38	January 11th - - -	28	22	
" 27th - - -	3	1	" 12th - - -	18	14	
" 28th - - -	5	4	" 13th - - -	18	15	
" 29th - - -	–	7	" 14th - - -	34	28	
" 30th - - -	–	5	" 15th - - -	24	27	
" 31st - - -	–	4	" 16th - - -	30	28	
1897:			" 17th - - -	35	27	
January 1st - - -	10	8	" 18th - - -	31	27	
" 2nd - - -	10	9	" 19th - - -	36	37	
" 3rd - - -	16	18	" 20th - - -	33	31	
" 4th - - -	15	16	" 21st - - -	21	23	
" 5th - - -	16	16	" 22nd - - -	1	2	Karachi District.
" 6th - - -	20	17	" 22nd - - -	32	33	Karachi City.
" 7th - - -	20	19	" 23rd - - -	30	29	
" 8th - - -	27	29	" 24th - - -	22	23	
" 9th - - -	16	16				
" 10th - - -	43	35	Total - - -	633	608	

STATEMENT of Cases of Plague outside BOMBAY and KARACHI.

DATE OF REPORT.	Ahmedabad.	Surat.	Broach.	Abu Road.	Marwar.	Poona.	Ahmednagar.	Sholapur.	Dhulia.	Kalyan.	Kolhapur.	Kathiawar.	Thana.	Cutch.	Baroda Territory.	Nasik.	Khandesh.	Kaira.	Satara.	Kotri.	Hyderabad.	Tatta.	Mahi Kantha.	Ratnagiri.	Shikarpur.	Jubbulpur.
16th December 1896 - - -	17	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24th " " - - -	-	-	2	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29th " " - - -	-	1	-	-	-	47	4	1	1	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
31st " " - - -	17	1	2	-	-	9	-	-	-	-	-	5	55	-	-	-	-	-	-	-	-	-	-	-	-	-
2nd January 1897 - - -	11	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	-	-	-	-	-	-	-	-
4th " " - - -	-	1	-	-	-	6	-	-	-	-	-	2	46	-	12	-	-	-	-	-	-	-	-	-	-	-
6th " " - - -	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-
7th " " - - -	9	-	-	-	-	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8th " " - - -	2	4	-	-	-	2	-	-	-	-	-	-	47	-	1	-	2	-	-	-	-	-	-	-	-	1
11th " " - - -	-	-	-	-	-	40	1	1	-	-	-	2	24	2	3	1	2	4	4	-	-	-	-	-	-	-
12th " " - - -	3	1	1	-	-	-	1	-	-	-	-	-	-	-	3	-	1	-	36	-	-	-	-	-	-	-
13th " " - - -	-	-	-	-	-	18	-	-	-	-	-	-	-	2	-	-	-	-	-	1	8	9	-	-	3	-
14th " " - - -	-	-	-	-	-	-	-	-	-	-	-	3	32	-	-	-	-	-	-	-	-	-	2	-	-	-
15th " " - - -	-	2	-	-	-	19	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-
18th " " - - -	1	-	-	-	-	13	-	-	-	-	-	3	-	-	3	-	-	-	-	-	-	-	-	32	-	-
20th " " - - -	3	1	-	-	-	15	-	-	-	-	-	-	74	1	1	-	1	-	3	-	-	-	-	-	-	-
21st " " - - -	-	-	-	-	-	4	-	-	-	-	-	1	44	-	2	-	-	-	-	-	-	-	-	-	-	-
22nd " " - - -	2	1	-	-	-	13	1	-	-	-	-	-	-	-	-	1	-	-	5	-	-	-	-	-	-	-
23rd " " - - -	-	1	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-
25th " " - - -	-	-	1	-	-	11	-	1	-	-	-	2	40	-	5	-	-	-	-	-	-	-	-	-	-	-
TOTAL - - -	65	15	7	2	4	224	7	3	1	1	1	18	363	26	30	6	6	4	55	1	8	9	2	32	3	1

STATEMENT of Plague Seizures and Deaths in the Town of BOMBAY.

Date.	Seizures.	Deaths.	Date.	Seizures.	Deaths.
	Number.	Number.		Number.	Number.
December 1st - - - -	19	11	December 18th - - -	67	30
„ 2nd - - - -	28	20	„ 19th - - -	33	36
„ 3rd - - - -	21	20	„ 20th - - -	44	28
„ 4th - - - -	43	23	„ 21st - - -	49	26
„ 5th - - - -	35	16	„ 22nd - - -	66	40
„ 6th - - - -	43	28	„ 23rd - - -	85	37
„ 7th - - - -	28	28	„ 24th - - -	75	65
„ 8th - - - -	55	37	„ 25th - - -	46	49
„ 9th - - - -	42	30	„ 26th - - -	65	53
„ 10th - - - -	49	41	„ 27th - - -	73	56
„ 11th - - -	51	37	„ 28th - - -	95	70
„ 12th - - - -	51	35	„ 29th - - -	82	60
„ 13th - - - -	58	47	„ 30th - - -	87	55
„ 14th - - - -	44	42	„ 31st - - -	72	46
„ 15th - - - -	46	29			
„ 16th - - - -	44	29			
„ 17th - - - -	59	36	Total - - -	1,655	1,160

STATEMENT of Plague Seizures and Deaths in the Town of BOMBAY.

Date. 1.	Seizures. 2.	Deaths. 3.	Date. 1.	Seizures. 2.	Deaths. 3.
1897:			1897:		
January 1st - - - -	62	61	January 19th - - - -	58	63
„ 2nd - - - -	78	59	„ 20th - - - -	69	75
„ 3rd - - - -	50	32	„ 21st - - - -	54	69
„ 4th - - - -	80	48	„ 22nd - - - -	88	70
„ 5th - - - -	59	54	„ 23rd - - - -	62	63
„ 6th - - - -	91	54	„ 24th - - - -	82	55
„ 7th - - - -	44	48	„ 25th - - - -	69	66
„ 8th - - - -	87	42			
„ 9th - - - -	82	40	Total - - -	1,791	1,444
„ 10th - - - -	83	40			
„ 11th - - - -	78	57			
„ 12th - - - -	102	54			
„ 13th - - - -	68	46	Total during October - -	389	276
„ 14th - - - -	76	46	„ „ November - -	338	268
„ 15th - - - -	89	90	„ „ December - -	1,655	1,160
„ 16th - - - -	77	100	„ up to 25th January - -	1,791	1,444
„ 17th - - - -	67	62			
„ 18th - - - -	56	54	GRAND TOTAL - -	4,168	3,148

STATEMENT of Plague Seizures and Deaths in the Town of KARACHI.

Date. 1.	Seizures. 2.	Deaths. 3.	Date. 1.	Seizures. 2.	Deaths. 3.
1896:			1897:		
December 10th to 26th - -	39	38	January 11th - - -	28	22
„ 27th - - -	3	1	„ 12th - - -	18	14
„ 28th - - -	5	4	„ 13th - - -	18	15
„ 29th - - -	—	7	„ 14th - - -	34	28
„ 30th - - -	—	5	„ 15th - - -	24	27
„ 31st - - -	—	4	„ 16th - - -	30	28
1897:			„ 17th - - -	35	27
January 1st - - -	10	8	„ 18th - - -	31	27
„ 2nd - - -	10	9	„ 19th - - -	36	37
„ 3rd - - -	16	18	„ 20th - - -	33	31
„ 4th - - -	15	16	„ 21st - - -	21	23
„ 5th - - -	16	16	„ 22nd - - -	1	2 Karachi District.
„ 6th - - -	20	17	„ 22nd - - -	32	33 Karachi City.
„ 7th - - -	20	19	„ 23rd - - -	30	29
„ 8th - - -	27	29	„ 24th - - -	22	23
„ 9th - - -	16	16			
„ 10th - - -	43	35	Total - - -	633	608

STATEMENT of Cases of Plague outside BOMBAY and KARACHI.

DATE OF REPORT.	Ahmedabad.	Surat.	Broach.	Abu Road.	Marwar.	Poona.	Ahmednagar.	Sholapur.	Dhulia.	Kalyan.	Kolhapur.	Kathiawar.	Thana.	Cutch.	Baroda Territory.	Nasik.	Khandesh.	Kaira.	Satara.	Kotri.	Hyderabad.	Tatta.	Mahi Kantha.	Ratnagiri.	Shikarpur.	Jubbulpur.
18th December 1896 - - -	17	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24th " " - - -	-	-	2	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29th " " - - -	-	1	-	-	-	47	4	1	1	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
31st " " - - -	17	1	2	-	-	9	-	-	-	-	-	5	55	-	-	-	-	-	-	-	-	-	-	-	-	-
2nd January 1897 - - -	11	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	-	-	-	-	-	-	-	-
4th " " - - -	-	1	-	-	-	6	-	-	-	-	-	2	46	-	12	-	-	-	-	-	-	-	-	-	-	-
6th " " - - -	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-
7th " " - - -	9	-	-	-	-	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8th " " - - -	2	4	-	-	-	2	-	-	-	-	-	-	47	-	1	-	2	-	-	-	-	-	-	-	-	1
11th " " - - -	-	-	-	-	-	40	1	1	-	-	-	2	24	2	3	1	2	4	4	-	-	-	-	-	-	-
12th " " - - -	3	1	1	-	-	-	1	-	-	-	-	-	-	-	3	-	1	-	36	-	-	-	-	-	-	-
13th " " - - -	-	-	-	-	-	18	-	-	-	-	-	-	-	2	-	-	-	-	-	1	8	9	-	-	3	-
14th " " - - -	-	-	-	-	-	-	-	-	-	-	-	3	32	-	-	-	-	-	-	-	-	-	2	-	-	-
15th " " - - -	-	2	-	-	-	19	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-
18th " " - - -	1	-	-	-	-	13	-	-	-	-	-	3	-	-	3	-	-	-	-	-	-	-	-	32	-	-
20th " " - - -	3	1	-	-	-	15	-	-	-	-	-	-	74	1	1	-	1	-	3	-	-	-	-	-	-	-
21st " " - - -	-	-	-	-	-	4	-	-	-	-	-	1	44	-	2	-	-	-	-	-	-	-	-	-	-	-
22nd " " - - -	2	1	-	-	-	13	1	-	-	-	-	-	-	-	-	1	-	-	5	-	-	-	-	-	-	-
23rd " " - - -	-	1	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-
25th " " - - -	-	-	1	-	-	11	-	1	-	-	-	2	40	-	5	-	-	-	-	-	-	-	-	-	-	-
TOTAL - - -	65	15	7	2	4	224	7	3	1	1	1	18	363	26	30	6	6	4	55	1	8	9	2	32	3	1

Enclosure No. 2.

WEEKLY STATEMENT of Mortality in the Town of BOMBAY.

Week ending	Total Number of Deaths.	Average Number of Deaths during the Corresponding Period of the Preceding Five Years.	Week ending	Total Number of Deaths.	Average Number of Deaths during the Corresponding Period of the Preceding Five Years.
1896:			1896:		
October 6th - - -	754	455	December 1st - - -	742	432
„ 13th - - -	612	467	„ 8th - - -	1,032	431
„ 20th - - -	582	448	„ 15th - - -	1,284	445
„ 27th - - -	665	442	„ 22nd - - -	1,387	443
			„ 29th - - -	1,824	449
November 3rd - - -	642	414	1897:		
„ 10th - - -	597	424	January 5th - - -	1,693	474
„ 17th - - -	666	434	„ 12th - - -	1,613	458
„ 24th - - -	726	420	„ 19th - - -	1,735	479

Enclosure No. 3.

MEMORANDUM on the Plague by Medical Practitioners of BOMBAY.

We, the undersigned medical officers and members of the Special Research Committee, are of opinion that the bubonic plague now prevailing in the City is, under certain conditions, only slightly contagious or infectious, and the facts observed in connection with individual cases and those associated with the general progress of the disease, warrant us in concluding that its incidence is greatly due to local conditions.

We are emphatically of opinion that the only practical method of dealing with the outbreak and of arresting the progress of the disease is by the removal of the inmates from those houses in which a case of the disease occurs.

We quite appreciate the practical difficulties attending the adoption of this proposal, but in such an emergency as the present, these difficulties can and must be overcome. The Municipal Corporation will no doubt provide suitable huts, free of rent, for the accommodation of the different classes, and we understand that mill companies and other employers of labour are prepared to erect huts for their different employés. The experience gained in the melas at Allahabad and Hurdwar will be available, as to the construction and arrangement of the huts.

There will thus be no difficulty experienced in providing sufficient and suitable accommodation for the evicted, and it requires only the concurrence and sympathy of the leaders of the different sections of the native community to render the scheme a success. If houses in healthy localities are available for occupation, there is no reason why they should not be utilized.

The steps leading up to removal would be the report to the Health Officer of a case by a duly qualified medical officer. The Health Officer would then notify the occurrence to the municipal authorities, and would at the same time submit his recommendations for the removal of the inmates in the particular home, and if he considered it necessary of those also in the immediate neighbourhood. The municipal authorities would then take the necessary action and indicate the huts available. Carts, if necessary, should be provided free of cost, for the removal of the goods and chattels of the inmates.

The person attacked would either be removed to hospital or remain in the house with his or her relatives until recovery or death took place. The house would then be completely vacated and taken possession of by the Health Officer for purposes of cleaning and disinfection, and he should be invested with full powers, in consultation with the Executive Engineer, for removing all partitions, erections or portions of house walls which impede or obstruct ventilation. After an interval to be determined by the Health Officer, the house would be re-occupied.

There can be no question as to the necessity for the adoption of the measure we now advocate, and we trust that, in the interests not only of Bombay, but also in those of the whole of India, it will be at once accepted and acted upon, more especially as the untiring energy displayed in the thorough and systematic cleaning and disinfection of the affected parts of the city has as yet failed to arrest the progress of the disease.

K. N. Bahadurji.
James Arnott.
Temulji Bhicaji Nariman.
Ismail Jan Mahomed.
Bhalchandra Krishna.
E. H. Hankin.
L. F. Childe.
Accacio G. Viegas.
N. F. Surveyor.
Thomas Blaney.
Henry Cook, M.D., *Surgeon Major General.*
James Cleghorn, *Director General, Indian Medical Service.*
T. S. Weir.
Sydney Smith.

I am of opinion that, as there are facts showing that the plague is spread by people coming from infected localities, the measures compelling the inhabitants to leave those localities ought to be accompanied by others calculated to control their further movements.

W. M. Haffkine.

Enclosure No. 4.

Note by Director General, Indian Medical Service, dated January 16, 1897.

I beg to submit, copy of a note signed by those medical practitioners of Bombay, who have had the greatest opportunities of becoming practically acquainted with the present outbreak of bubonic fever, and along with it, to prevent any future misrepresentation, a memorandum of the remarks I made to those gentlemen before I submitted the note for their approval and signature.

The proposal now submitted is quite a practicable one, more especially if the leaders of the different communities would interest themselves in the matter, and explain to those communities the necessity for the adoption of the recommendations. It is feared that if compulsory evacuation of infected houses is carried out, more especially in the case of Muhammadans, that there will be an outbreak; this is the prevailing feeling among the natives, and it was suggested to me, that if His Excellency the Governor could admit several of the chief moollahs to a private interview, the matter could be easily arranged.

The corporation have practically conferred full powers on Mr. Snow, the Municipal Commissioner, and his executives, represented by Dr. Weir, head of the Health Department, and by Mr. James, the Executive Engineer, have carried out their different duties vigorously and systematically, and at the same time have exhibited great tact in doing so.

The feeling of the native population has been decidedly against the sanitary measures enforced until a short time ago, when it has veered round, and the people are now willing to allow that benefit has resulted from those measures.

It would greatly strengthen the hands of the Health Department if His Excellency the Viceroy stated that he was pleased with the measures taken by the Corporation, and specially thanked Mr. Snow, Brigade-Surgeon, Lieutenant-Colonel Weir, and Mr. James, for the exertions they have hitherto made. The whole city is now under the inspection of the Health Department. All latrines, drains, and gullies, are being flushed; houses, as far as possible, are being cleaned, disinfected, and white-washed, and in those parts of the city not drained, surface drains of excellent construction are being made in connection with the house pipes. The continuance and extension of this work should be insisted upon as being of the greatest importance, and it should be clearly understood that there is no salvation outside the adoption of sanitary measures. The efforts of the Health Department are to a certain extent frustrated by the difficulty they find in cleansing and disinfecting inhabited houses, as this can only be effectually carried out in the case of rooms in which cases of plague have occurred, or in those which have been vacated by the tenants. The proposal now submitted of evacuating all houses in which a case of the disease has appeared, will enable the Health Department to apply its measures to the house as a whole. The importance of this will be understood from a description of the houses. The chawls or tenements may run up to seven stories, and the unit of construction is a long corridor with rooms opening on either side. In the corridor, either at one end or in the centre, is situated a water-tap with bathing platform, and alongside it a latrine with two or three seats. The whole tenement is built up of a congeries of these corridors and rooms, and contains 500 to 1,000 individuals. The only space between each tenement is a gully sufficiently wide to admit a sweeper. In most of the corridors and rooms, either from the absence of openings, or from the obstruction of the existing ones, there is absolutely no light admitted, and consequently no ventilation. The Health Officer informed me that he estimated that 70 per cent. of the population live in such houses. The corridors, before being taken in hand by the Health Department, were the repositories of filth of all kinds, and it is surprising that the mortality under such conditions has been so small. It shows, I think, that the disease, in the common acceptation of the terms, is only slightly contagious or infectious, and that its incidence is chiefly due to local conditions.

The importance of removal from the infected locality thus becomes apparent. Dr. Weir, the Health Officer, is now gradually trying to induce the inhabitants to vacate infected houses, and if generally carried out, he will require more assistance than at present. Under any circumstances, I do not consider that he has a sufficient number of officers for the supervision of operations, and I would recommend that the Government of Bombay should place at his disposal, free of cost to the Corporation, two of the Deputy Sanitary Commissioners serving under the Government of Bombay.

At the same time, it should be suggested that the Sanitary Commissioner and one Deputy Sanitary Commissioner should proceed to Karachi and take over the arrangements connected with that city. The Health Officer is a native, and is, I am afraid, wanting in the necessary force of character and initiative.

The Government of Bombay should, I think, legislate in the direction of conferring powers on the Municipal Committee to regulate the building and construction of houses, and to place a limit on the number of people inhabiting each room and house. Many of the former are now simply unfit for human habitation, and the sanitary arrangements connected with them are of the most crude and primitive description.

January 16, 1897. J. CLEGHORN.

Enclosure No. 5.

No. 45, dated Calcutta, January 19, 1897.

From J. P. HEWETT, Esq., C.I.E., Secretary to the Government of India, Home Department, to the SECRETARY TO THE GOVERNMENT OF BOMBAY, General Department.

I AM directed to forward, for the information of His Excellency the Governor in Council, a copy of a memorandum signed by some of the principal European and native medical practitioners of the city of Bombay, and members of the Special Research Committee regarding the bubonic plague in that city and measures for arresting its progress. This memorandum has been presented to the Government of India by Surgeon Major-General Cleghorn, Sanitary Commissioner with the Government of India, on return from his visit to Bombay, which formed the subject of the telegraphic correspondence with the Government of Bombay cited below.* Dr. Cleghorn shares in full the views recorded in the memorandun.

2. His Excellency in Council will observe that the view is expressed that the bubonic plague now prevailing in the city of Bombay is under certain conditions only slightly contagious or infectious; that its incidence is largely due to local causes, and that the only effective way of dealing with the outbreak and of arresting the progress of the disease is to insist on the evacuation of houses in which cases of plague have occurred. The gentlemen who have signed the memorandum consider that there will be no difficulty in providing sufficient and suitable accommodation for people removed from infected houses, and that it only requires the concurrence and sympathy of the leaders of the different sections of the community to render the plan proposed by them a success.

3. The Government of India regard this influential medical opinion that the plague is not at present either generally epidemic or contagious as of very great importance. The history of previous outbreaks of the disease shows, however, that it has a strong tendency to epidemicity. There has already been very grave loss of life in the population

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* Home Department, telegram No. 1, dated January 2, 1897. Bombay Government telegram, dated January 4, 1897.

of the city, and the consequences to the trade of Bombay already very serious, promise to be disastrous unless the plague can be speedily reduced. Should it assume a more severe epidemic form, the whole of India may be affected. The Government of India are therefore of opinion that there should be no hesitation in taking the strongest measures to prevent its spreading, even though they may be once distasteful to the people affected. The particular measures advocated in the memorandum, namely, the removal of all persons from infected houses, and the thorough disinfection of those houses, appear to the Government of India to be well calculated to check the progress of the disease, and the vigorous action that has been taken to clean and disinfect the infected parts of the city having failed to arrest its progress, it appears to the Government of India to be necessary that they should be adopted. Dr. Cleghorn has also reported to the Government of India that the nature of the buildings in which a large proportion of the inhabitants of Bombay dwell, make it specially important to remove all persons from infected houses, and to allow the officers of the Health Department to thoroughly cleanse and disinfect such houses. He points out that in the large and ill-lighted and ill-ventilated houses or chawls occupied by so many as 500 to 1,000 individuals, means of disinfection and cleansing can only be effectually carried out by the complete evacuation of the tenement in which a case of plague has occurred.

4. I am to say that the Governor General in Council commends the suggestions contained in the memorandum to the earnest attention of the Government of Bombay, and trusts that the Governor in Council may find it possible to act upon them. Should the Government of Bombay concur in thinking that the removal of all persons from infected houses is the best practical method for checking the progress of the plague, the Governor General in Council will be glad to learn in due course the measures which are adopted to bring the plan into general effect.

It will no doubt commend itself to the Government of Bombay that convenient temporary accomodation suitable to the families to be removed should be got ready, before measures for evacuation are taken. It seems to the Government of India desirable that, unless the Governor in Council sees objection to this course, the memorandum should be made public. The Government of India would be also glad to know whether the Government of Bombay consider it necessary to strengthen the building regulations of the city, and to take increased power to prevent overcrowding in the chawls.

5. Dr. Cleghorn has suggested that two of the Deputy Sanitary Commissioners serving under the Government of Bombay should be placed at the disposal of the Health Officer free of cost to the Corporation. I am to request that this suggestion may receive the consideration of His Excellency in Council.

6. In conclusion, I am to say that the Governor General in Council, has learned with the greatest satisfaction, of the untiring energy which has been displayed by the local authorities in the thorough and systematic cleansing and disinfection of the infected parts of the city. The liberal measures sanctioned by the Corporation towards these ends, and the energy displayed by the executive officers of the Corporation, viz., Mr. Snow, Municipal Commissioner, Brigade-Surgeon Lieutenant-Colonel Weir, Executive Health Officer, and Mr. James, Executive Engineer, and their subordinates, are appreciated by the Governor General in Council, as they are no doubt also by the Government of Bombay. It is in the opinion of the Government of India, only by continuing and extending these efforts unremittingly, and by supplementing them by even stronger measures such as that which is suggested in this letter, that the spread of the disease can be successfully and effectively arrested.

Enclosure No. 6.

No. 19, dated Lahore, January 8, 1897.

From H. J. MAYNARD, Esq., Junior Secretary to the Government of the Punjab to the SECRETARY TO THE GOVERNMENT OF INDIA, Home Department.

WITH reference to your telegram No. 567 (Sanitary), dated 30th December 1896, I am directed to forward, for the information of the Government of India, a copy of the proceedings of a Conference which met on 3rd January to consider the measures to be taken for the inspection of trains and the removal and isolation of persons suspected to be suffering from bubonic plague. Copies of the letters* noted below are attached to this letter, and show the orders issued by His Honour the Lieutenant-Governor on the recommendations of the Conference. I am to add that the Bombay Government is being addressed with reference to the co-operation of the police in the proposed measures at Rewari and Bhatinda.

2. I am to explain that the British Government has full sovereign rights over the railway station of Khanpur (which is situated within the Bahawalpur State) and over the portion of the Bhatinda station (situated in Patiala), which belongs to the Rewari-Ferozepore State Railway.† The laws in force in British territory are in force within railway limits in both cases. The other stations at which it is proposed to station inspecting officers are in British territory.

3. The legal position appears to His Honour the Lieutenant-Governor as at present advised to be this. Bubonic fever has been added to the list of (Resolution No. 835 R. T., dated 23rd October 1896) infectious or contagious disorders for the purposes of the Indian Railways Act in No. 7, Chapter II, Part II of the General Rules, promulgated in Government of India Circular No. 6 (Railway), dated 12th March 1895. No. 8 of those rules, therefore, applies to cases of bubonic fever; and this rule has legal validity under Clause (*d*) of Section 47 of Act IX of 1890.

4. Rule 8 A, which deals with the removal of patients with the assistance of the police and their consignment to the charge of the latter, is printed in small type in the Volume of Rules, and as appears from Circular No. 6 (Railway), dated 12th March 1895, is a subsidiary rule regarded as made under Clause (*b*) of Section 101 of Act IX of 1890. That clause deals with the liability of a railway servant, who, when on duty, disobeys any rule or order which is not inconsistent with any of the general rules, and thereby endangers the safety of any person. It appears, therefore, to His Honour the Lieutenant-Governor that Rule 8 A, even if it gave all the powers which are required for the purposes of the measures now proposed (which it does not do), is in no sense one binding upon the general public.

5. Under these circumstances it is evident that the existing law does not furnish the required authority for dealing with suspected cases of bubonic plague, and the Lieutenant-Governor leaves it to the Government of India to take such action as it may consider fit to legalise the measures which have been proposed, and are, from the extreme necessity of the case, being carried out in anticipation of their being legalized.

COPY OF PROCEEDINGS of a Conference held at Lieutenant-Colonel Hutchinson's House on 3rd January.

Present:

Lieutenant-Colonel Hutchinson, Commissioner, Lahore.
Lieutenant-Colonel Brackenbury, Manager, North Western Railway.
Dr. Raye, Inspector General of Civil Hospitals, Punjab.
H. J. Maynard, Esq., Junior Secretary.
The Sanitary Commissioner.
Dr. Roe was not present.

I.—As regards the places at which trains ought to be inspected to ascertain whether any of the passengers are suffering from bubonic plague, the Conference considered it desirable to select places:—

(1.) At which under the ordinary arrangements of the railway administration trains stop for a considerable time.

(2.) At which the trains from Karachi arrive by daylight as night inspections are apt to be unsatisfactory besides causing inconvenience.

(3.) Which are railway junctions.

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* To Commissioner, Lahore, No. 2, of 5th January 1897. To Inspector General of Police, No. 3, of 5th January 1897. To Inspector General of Civil Hospitals, No. 4, of 5th January 1897.

† Notification No. 169-I., dated 18th July 1882. Notification No. 1018-I., dated 25th February 1887. Notification No. 3927-I., dated 5th November 1886.

(4.) Which are not too near large towns. Passengers leaving the railway at large towns are apt to be met by friends; and there are various reasons why the proposed arrangements would be more difficult of execution here than elsewhere. The Conference considered that places situated in Native States have this advantage, from the point of view of the proposed arrangements that even if (as on the North Western Railway), the British Government exercises full jurisdiction on the line of railway, the immediate neighbourhood is subject to Native State law, which is likely to be more elastic than that in force in British territory and to permit of more drastic measures, should such be necessary.

The stations at which the Conference proposes to hold inspections along the North Western Railway from Karachi are:—

Rukh or Sukkur as to which Colonel Brackenbury will communicate with the Commissioner in Sind.

Khanpur, situated in Bahawalpur territory about 70 miles from the Sind frontier. The trains from Karachi arrive here at 7.11 a.m. and 6.20 p.m. They wait for half-an-hour in order that tickets may be inspected. There is a rest house here, the property of the Nawab; a railway refreshment room and a local railway hospital. There is also a tahsil or some corresponding local administrative centre of the Bahawalpur State. The town is not large.

This would be the principal place of inspection, and a European medical officer, if appointed for the duty, would be stationed here.

Sher Shah.—The trains arrive here from Karachi at 15.53 (3.33 p.m), and 0.39 a.m. The one train in the day which leaves for Bhakkar leaves at 18.30 (6.30 p.m.). The Conference would station a hospital assistant here to inspect the afternoon train only, leaving the night train to be dealt with on arrival at Raiwind.

Raiwind.—Trains arrive here at 3.17 a.m. and 8.19 a.m. The Conference would have a hospital assistant here to inspeet the latter train, which will not be inspected at Sher Shah because it arrives by night. Trains stop half-an-hour here.

As regards stations not on the North Western Railway, the Conference expressed the following opinions. From a letter from the East Indian Railway administration to Dr. Raye, which is appended to these minutes, it appears that arrangements have been made on this system for the inspection of trains coming from Bombay. But this will not protect the Punjab so far as the Rajputana line is concerned, and it is just as important to take precautions against Bombay as against Karachi. The Conference, therefore, recommend arrangements similar to those proposed for the North Western Railway at Rewari and at Bhatinda.

Dr. Raye observed that some two months ago, foreseeing that some orders of this kind would be issued, he asked the Civil Surgeon of Delhi, in consultation with the Deputy Commissioner, to keep a hospital assistant on the platform to inspect all trains from Bombay, and he believes this is now being done. He has also addressed the Commissioner of Lahore, asking him to arrange for an isolation hospital at Lahore, and Colonel Hutchinson says orders have been sent to the Deputy Commissioner on this subject, though he does not know what has been done. Dr. Raye also wrote to the Civil Surgeon at Multan to arrange for an isolation hospital there.

II.—As regards the agency by which inspections should be conducted:—

Dr. Raye says, the plague takes two to ten days to develop. Dr. Haffkine's instructions as to diagnosis would not much help an ordinary hospital assistant. It follows that not only may an infected person entirely escape observation for a long time, but that only a competent medical man can diagnose the disease with certainty even when developed to some degree.

He is prepared therefore to ask Government of India for a special officer for the Khanpur inspecting station; but whether for a commissioned medical officer or for an apothecary, he will leave it to His Honour to decide. He thinks the popular objection to a European likely to be less strong than the objection to a native, as under the former the chances of extortion are diminished.

But he would employ only hospital assistants at the other places of inspection.

Colonel Hutchinson is strongly in favour of European agency, but does not press this as regards other places than Khanpur.

III. System of Inspection :

People should not be removed from the train for purposes of inspection, nor should carriage doors be locked before arrival at the station where the inspection is to take place.

The doctor should go round with the ticket collector and look at all passengers who have booked either from Karachi or Sukkur. (The suggestion as to bookings from Sukkur was made by Colonel Brackenbury, who thought re-bookings possible). He would also, of course, look at any other passengers who were evidently ill.

IV. Removal from train, and isolation in temporary hospital :

The Conference consider the legal question here of great importance, particularly as the whole North Western Railway is under British jurisdiction, and British law applies. Dr. Raye feels unable to issue to his men the necessary detailed instructions unless assured that such instructions, whether in all respects legal or not, will be fully endorsed by the executive authorities.

The legal position appeared to the Conference to be this.

Bubonic plague is an infectious disorder within the meaning of the Railways Act. Colonel Brackenbury believed it had been notified to be such by a Gazette notification which was not before the Conference. At all events, this could probably be arranged for without delay. Accordingly Rules 7, 8, 9 on pages 153 *et seq.* of the volume below apply.

The Conference is unable to determine how far those rules are legally binding upon the general public, and how far they are mere executive instructions for the guidance of Railway employés and police. But it proposes that those rules should be acted upon so far as they are applicable, and that, if necessary—

1. Persons suspected to be suffering from plague should be removed from the train with the assistance of the police, if necessary, and placed and kept in the observation sheds, or the plague sheds, hereafter referred to, as the case may be.
2. Persons alighting from the train at inspection stations, and similarly suspected of disease, should be similarly dealt with. The East Indian Railway rules appended indicate the procedure to be followed, with the exception of the use of observation sheds as well as of plague sheds, to which reference is again made below.

V. Details of arrangements as to sheds, establishment, contingencies, &c. :

1. At least two sheds should be erected at once at each place of inspection. One shed would be an observation or quarantine shed, to which passengers merely suspected of the disease should be removed. The other would be a shed for undoubted plague cases. More sheds would, of course, be required in time; *e.g.*, the observation or quarantine shed might become infected by the presence of plague patients and would cease to serve its purpose.

The quarantine shed would be a very reasonably sufficient distance from the plague shed.

The material should be grass, and there should be a low mud wall round each shed to exclude draughts. The quarantine shed should have space for two persons, the plague shed should have space for four. Measurements should be according to the jail standard of cubic space per head.

2. *Furniture and Establishment.*—There should be no establishment to begin with; but the medical officer in charge should have instructions to engage a bhisti and sweeper as soon as he had any patients.

the first, bedding, beds, vessels, &c., should be provided for at least two patients d; additions being made as required.

and treatment of patients should be entirely gratuitous.

of Funds.—An advance should be made to each medical officer by es 10 to each was suggested as sufficient to begin with, the money being lace from provincial funds. The Commissioner considers district funds meet all charges in British territory. Whether the Provincial e States should find the money in Native States can be considered ould be put up by district boards in British territory and by the d elsewhere.

Dr. Raye will draft simple instructions to his officers for the diagnosis and treatment of plague. The officer concerned will at once telegraph to him the removal from the train and confinement in hospital of any suspected patient. Civil Surgeons will have instructions to give assistance as may be required.

As regards the land required for sites, Colonel Hutchinson thought there would be no difficulty. Native States would provide land as required for temporary use; and elsewhere Deputy Commissioners would make the necessary arrangements, renting land unless it were obtainable free.

It will, of course, be understood that the Conference propose to have a special medical man on special duty at each place of inspection. The travelling medical employés of the railway would be useless for the purpose required.

Among minor points, which the Conference briefly considered, were arrangements for the security of the Cantonment of Dera Ismail Khan. It was thought that the cantonment authorities would be able to arrange for their own protection by stationing pickets at the Indus Bridge-of-boats, as they did on some previous occasion when cholera threatened.

No. 460 M., dated Allahabad, 24th November 1896.

From Dr. R. G. GRIFFITH, Chief Medical Officer, East Indian Railway, Medical Department, to Dr. O. C. Raye, Inspector General of Civil Hospitals, Punjab, Lahore.

Your letter of 21st instant.

The following precautions are taken on the East Indian Railway:—

(1) On each district, one native doctor inspects all trains from Bombay At Allahabad and Asansol special men have been appointed for this duty.

(2) In the event of any suspicious case being found, the patient is removed at once to the Contagious Diseases Hospital, and the carriage in which the person was travelling is cut off and disinfected.

(3) The patient's fellow-passengers are removed to an empty carriage into which no one else is admitted, and this carriage also is cut off and disinfected, at the first station where there is a medical officer or native doctor after the last passenger has left it.

(4) The address of all passengers travelling in the carriage is taken and telegraphed to the station master at their destination for information of the local authorities.

(5) While in hospital every precaution is taken to isolate the patient completely, and for this the assistance of the police is obtained, if necessary.

(6) On leaving hospital the patient's clothes are burned—also all bedding, &c., and the hospital disinfected.

(7) The medical staff take the same precautions regarding the disinfection of themselves as they do when attending a case of small-pox.

(8) All cases are immediately reported to the chief medical officer.

(9) The medical staff pay increased attention to the sanitation of their stations.

No. 2, dated Lahore, 5th January 1897.

From the JUNIOR SECRETARY to the Government of the Punjab, to the COMMISSIONER and SUPERINTENDENT, Lahore Division.

The proceedings of a Conference held between you, Lieutenant Colonel Brackenbury, manager, North Western Railway, and Surgeon Colonel Raye, Inspector General of Civil Hospitals, to consider the measures to be taken for the inspection of trains arriving from Karachi and the removal and treatment of plague patients, have been laid before His Honour the Lieutenant Governor, and I am to communicate the following orders on the proposals of the Conference.

2. His Honour agrees with the Conference that inspection should be carried out at Khanpur in the Bahawalpur State, at Sher Shah and at Raiwind. Both the morning and afternoon trains should be inspected at the first of these places; only the afternoon train (arriving at 15-53) should be inspected at Sher Shah, the other train being inspected at Raiwind on its arrival there at 8-19. It has doubtless not escaped your notice that under this arrangement (which is according to the proposals of the Conference), passengers for Multan, by the train which passes Sher Shah by night, will be examined only at Khanpur.

3. The Conference has also recommended inspections at Bhatinda and Rewari; it is unnecessary to deal with this proposal in this letter; but I am to say for your information that His Honour agrees with the Conference on the subject.

4. The Inspector General of Civil Hospitals will be asked to arrange for a commissioned medical officer to be placed on special duty at Khanpur, and for special hospital assistants for service at Sher Shah and Raiwind.

5. His Honour agrees with the Conference that the medical officer appointed for inspection duty should accompany the ticket collector on his rounds, and pay special attention to passengers who have booked from Karachi or Sukkur. His Honour does not think it would be prudent for an examining officer to attempt forcibly to examine a patient for swellings of the glands. Should a patient be unwilling to submit to such examination, he should simply be detained as a suspicious case; and, of course, very great caution would be required in dealing with females.

6. The Lieutenant Governor accepts the recommendations of the Conference that persons suspected to be suffering from plague should be removed from the train (or if they have already alighted, should be detained), and kept in the observation shed or the plague shed, as the case may be. The assistance of the police should be called in, if necessary.

7. His Honour fears that there is no power under the Railway Act to do all that is needed; but he intends to address Government of India, informing them of what is actually being done, and leaving them to take the necessary steps to legalise it. In the meanwhile you and Surgeon Colonel Raye may rest assured that those employed in the execution of these orders will have the support of Government, provided they act with prudence and caution, so as to cause the minimum of annoyance.

8. The proposals of the Conference contained in the annexed extract from the proceedings are approved by the Lieutenant Governor. The sheds at Sher Shah and Raiwind should be put up by the district boards concerned, which should also find the money for contingencies and for an advance of 10 rupees each to the hospital assistants on inspection duty. His Highness the Nawab of Bahawalpur is being asked to give any assistance that you may require to provide sites and put up sheds at Khanpur, and I am to request you to place yourself in direct communication with him on the subject. An advance from provincial funds will be made to the Inspector General of Civil Hospitals to meet charges for contingencies at Khanpur.

9. A point on which orders are needed, and which is of great importance, is this: When a passenger is detained by a hospital assistant or other inferior medical officer, whose diagnosis cannot be trusted, a superior medical officer should see the patient as soon as possible; and Dr. Raye is being asked to arrange for this.

No. 3, dated 5th January 1897.

Endorsement by the Punjab Government.

COPY of Extract, paragraphs 1, 2, 3, 6, 7, forwarded to the Inspector General of Police, Punjab, for information and communication to the Assistant Inspector General of Railway Police.

No. 4, dated 5th January 1897.

From the JUNIOR SECRETARY to the Government of the Punjab to the INSPECTOR GENERAL of CIVIL HOSPITALS, Punjab.

I AM directed to forward, for your information, a copy of a letter, No. 2, to-day addressed to the Commissioner of the Lahore Division, conveying orders on the proposals of the Conference which considered the measures to be taken for the inspection of trains arriving from Karachi and the isolation of plague patients. I am to ask you to arrange as early as possible for the medical officers referred to in paragraph 4 of that letter, and to furnish them with instructions for the diagnosis of the disease and for the discharge of the duties indicated in paragraphs 5 and 6 of the letter.

2. As regards the proposed inspections at Bhatinda and Rewari, I am to request you to place yourself in communication with the railway authorities concerned, with a view to the introduction of arrangements similar to those adopted on the North-Western Railway. The Bombay Government, under whose control the police on these lines are, will be addressed on the subject of the co-operation of the police in the proposed measures. As regards the officer to be placed on inspection duty at Rewari, which is an important place for the purposes of plague prevention, I am to ask you to consider whether a commissioned medical officer ought not to be appointed here as well as at Khanpur.

3. I am to direct your special attention to paragraph 9 in my letter to the Commissioner, Lahore, of to-day's date, and to request that instructions may be issued to Civil Surgeons and hospital assistants accordingly.

4. The expenditure by you of 100 rupees on account of contingencies is hereby sanctioned. The question of the incidence of this expenditure will be decided hereafter.

Enclosure No. 7.

No. 42, dated Lahore, 16th January 1897.

From H. J. MAYNARD, Esq., Junior Secretary to the Government of the Punjab and its Dependencies to the SECRETARY TO THE GOVERNMENT OF INDIA, Home Department.

IN continuation of my letter, No. 19, dated the 17th of January 1897, I am directed to forward, for the information of the Government of India, a copy of the further correspondence* noted below, reporting the measures to be taken for the removal from trains and isolation of European or Eurasian passengers found to have symptoms of bubonic plague, and containing suggestions for hospital sheds.

No. 34, dated Lahore, 7th January 1897.

From Surgeon-Colonel D. O'C. RAYE, M.D., Inspector-General of Civil Hospitals, Punjab, to the JUNIOR SECRETARY TO GOVERNMENT, Punjab.

WITH reference to your letter, No. 4, of the 5th instant, I have the honour to enclose a note which I have made showing the preliminary requirements for isolation and quarantine sheds. The contents of this note might, I think, be communicated to the authorities concerned in the case of Rewari and Bhatinda.

Suggestions for Hospital Sheds.

I think that the hospital sheds might be 18 feet by 6 feet, with side walls eight feet high, and a sloping roof, the centre pole of which would rise, say, six feet above the wall. This would accommodate four patients, giving over 600 cubic feet of space to each. I would have a doorway 6 × 4 feet provided with a mat door in each side wall, and an opening about two feet square, with a mat shutter at each end, placed about five feet from the ground.

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* From Inspector-General of Civil Hospitals, No. 34, dated 7th January 1897, to Inspector-General of Civil Hospitals, No. 38, dated 16th January 1897.

Taking each bed as 6 × 4 feet, there would be four feet between the beds, while each would be two feet from the wall, and a central passage six feet wide would be provided between the feet of the beds.

These rough sketches show the general idea, and how the beds would be placed. The walls should be of reeds or thatch, not mud. Such walls allow perflation of air, and with sufficient bedding would not be too cold (sketches not reproduced).

[*] An observation shed for two beds should be also provided, say 18 feet by 8, with but one door.

A hut of similar construction, about 12 feet square, would be needed for the hospital assistant.

[†] At first two beds in the hospital shed and one in the observation ward need only be equipped.

For each bed two pairs of sheets, three country blankets, one mattress, and one pillow, each filled with straw, would suffice.

For European patients, a tent would be most suitable, in which a newár cot with a durrie, a rezai, four sheets, two pillow covers, three blankets, and two cotton pillows, would be at first necessary, also a chair, a commode, urinal, and "necessary" tent.

No. 38, dated Lahore, 16th January 1897.

From H. J. MAYNARD, Esq., Junior Secretary to the Government of the Punjab and its Dependencies to the INSPECTOR GENERAL, CIVIL HOSPITALS, Punjab.

IN continuation of my endorsement, No. 21, dated the 8th of January 1897, and with reference to your communication[‡] to this office noted below, I am directed to say that (as suggested by you) the following instructions should be observed in case of European or Eurasian passengers found by inspecting medical officers at Khánpur, Sher Shah, Ráiwind, Rewári or Bhatinda to have symptoms of bubonic plague:—The commissioned medical officers who will be stationed at Khánpur and Rewári will exercise their discretion in determining whether any such person shall be detained or sent on to the next Civil Surgeon. Much will depend on the facility of obtaining proper food, nursing, &c. The Motamid of the Baháwalpur State has been requested to arrange at once for a tent and necessary furniture, cooking utensils, &c. at Khánpur, and a copy of the notes of requirements forwarded with your letter, No. 34, dated 7th January 1897, will be sent to His Highness the Nawáb of Baháwalpur and to the Commissioner of Delhi.

2. The hospital assistants at the three other inspecting stations will not be authorised to detain European or Eurasian passengers. Such persons if suspected to be suffering from plague should, in His Honour's opinion, be carried on in the train to the nearest Civil Surgeon, their fellow-passengers being dealt with in accordance with railway rules on the subject. On arrival at the nearest civil station the European or Eurasian plague patient should be taken to an isolation hospital and treated by the Civil Surgeon, who would be prepared for his arrival by a wire from the Hospital Assistant.

3. The nearest civil stations will be:—

(1.) In the case of Khánpur and Sher Shah: Mooltan. It is understood that you wrote some time ago to the Civil Surgeon to arrange for an isolation hospital there.

(2.) In the case of Ráiwind: Lahore. Here also it is understood that arrangements for an isolation hospital are being made.

(3.) In the case of Rewári: Gurgaon. A copy of this letter is being forwarded to Commissioner, Delhi, who will be asked to arrange in consultation with you for an isolation hospital there.

(4.) In the case of Bhatinda: Ferozepore. The Commissioner, Jullundur, will be similarly addressed: but I am to ask you to consider whether in this instance it might not be preferable to arrange for the patient to be sent back to Hissar.

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[*] A moveable screen of thatch 6 feet by 5, should be kept in readiness, so that if a female patient were dmitted privacy could be effected.

[†] A small thatch-work enclosure, without a roof, and about the size of an ordinary "necessary" hut, should e placed a few yards from the hospital shed.

[‡] No. 34, dated 7th January 1897.

4. You have been asked to communicate direct with the Agent, Bombay, Baroda and Central India Railway. I am to suggest that you should inform him of the contents of this letter.

5. I am to enclose, for your information, a copy of a letter from the Manager, North-Western Railway, No. 30-C., dated 6th January 1897, intimating the instructions issued by him for the examination of passengers from Karáchi and Sukkur.

Enclosure No. 8.

No. 18; dated Allahabad, 20th January 1897.

From W. H. L. Impey, Esq., Secretary to the Government of the North-Western Provinces and Oudh, Sanitation Department, to the Secretary to the Government of India, Home Department.

In reply to your telegram No. 566, dated 30th December 1896, I am directed to report, for the information of his Excellency the Govornor General in Council, the precautionary measures that have been adopted in these provinces with a view to the detection of cases of bubonic plague among passengers travelling from Karachi. Such passengers, I am to say, would enter these provinces at Saharanpur (*viâ* Umballa) or Ghaziabad (*viâ* Delhi). It has been ascertained from the Punjab Government and the Manager, North-Western Railway, that arrangements have been made for the inspection of passengers and the removal of patients at the principal stations in the Punjab; a hospital assistant has been posted at Delhi, and the Manager, North-Western Railway, has been asked to see that special inspection is made of passengers changing into the East Indian Railway at Umballa and Ghaziabad. The Agent, East Indian Railway, reports at the same time that the Company's chief medical officer has been instructed to arrange for the inspection of all East Indian railway trains at Umballa and Ghaziabad stations.

2. This Government, on its part, has posted hospital assistants for special duty (the examination of passengers and the treatment of patients) at Saharanpur and Ghaziabad, where temporary hospitals are being established in suitable places. The Inspector General of Civil Hospitals has been communicated with and is issuing necessary directions for the treatment of patients to the Civil Surgeons of Sharanpur and Meerut.

Enclosure No. 9.

No. 199 (Medical); dated Calcutta, 14th January 1897.

From H. H. Risley, Esq., c.i.e., Secretary to the Government of Bengal, Municipal (Medical) Department, to the Secretary to the Government of India, Home Department.

I am directed to submit, for the information of the Government of India, the accompanying copy of a note, dated the 7th January 1897, by the Health Officer to the Corporation of Calcutta, bringing to notice the fact that persons are arriving in Calcutta from Bombay, who, by breaking their journey on the way, succeed in evading suspicion as to their having come from Bombay, and consequently pass into the town without being medically examined or placed under sanitary surveillance.

2. On receipt of the first intimation of the outbreak of bubonic plague in Bombay, the Lieutenant Governor addressed the Governments of Bombay, the Central Provinces, and the North-Western Provinces by telegram, inquiring whether, in the event of the disease increasing, they would be prepared to move the railway authorities to take action under the Railway Act to prevent suspected persons from leaving Bombay by rail, and to remove at Jubbulpur, Nagpur, and Allahabad, persons pronounced to be infected by a Government medical officer. On receipt of intimation of such action, it was added, similar measures would be introduced at Bankipur and Burdwan. The Governments in question agreed to take the necessary action in the matter, and a copy of the correspondence was forwarded to the Agents, East Indian Railway and Bengal-Nagpur Railway, with the remark that the Lieutenant Governor was confident that he could count on the active co-operation of the railway authorities in the endeavour to check the spread of the disease along the lines of railway between Bombay and Calcutta. A report of the action taken by the Government of Bengal was given in paragraph 11 of this Department Resolution No. 937 T. M., dated 10th October 1896, a copy of which was communicated to the Government of India with my letter, No. 938 T. M., of the same

date. The action taken by the East Indian Railway Company is reported in the accompanying copy of a letter from the Agent, No. 9281, dated 9th October 1896, and its enclosures. The steps taken by the Governments of the Central Provinces and the North-Western Provinces are reported in their letters* noted below, addressed to the Government of India, and the telegram from the Home Department, No. 355 (Sanitary), dated 22nd October 1896, stated the case so far as reported at the time to the Government of India. So far all necessary measures appear to have been taken for the inspection of passengers along the lines of railway from Bombay to Calcutta, and, in the case of break of journey, Calcutta must trust to the efficiency of the precautions so adopted.

3 The only legal authority for dealing with persons travelling by rail appears to be contained in Sections 71 and 117 of the Railways Act, IX of 1890. The administrations of the East Indian and Bengal-Nagpur Railways were recently addressed by the Medical Board on the subject in connection with the attendance of Bombay delegates at the meeting of the Indian Congress in Calcutta, and both railways reported the arrangements in force on their lines. It will be seen, however, that their powers under the Railway Act extend only to persons in whom the disease has actually shown itself, and special legislation would be necessary to enable either the railway officials or the police or sanitary authorities of Calcutta to take any measures in respect of travellers who have merely come from Bombay by rail. Such travellers would not improbably object to being placed under any sort of surveillance, as the fact of their having come from Bombay would, if generally known, render it more difficult for them to procure lodgings. The attempts which have been made in the past to enforce quarantine by land in respect of cholera have, the Lieutenant Governor believes, proved wholly ineffectual, and even if the Government of India were prepared to legislate for the purpose of protecting Calcutta from the importation of plague from Bombay by rail, it would be impossible to guard against the evasion of any preventative measures that might be taken. In his Honour's opinion the true safeguard against the spread of plague to Calcutta is to be found in the thorough cleansing of the crowded quarters of the town. The Corporation have been urged to give their fullest attention to this, and specific recommendations have been made to them by the Medical Board on the subject. The Lieutenant Governor has recently called urgently for a report on their action in this respect, and if he finds that it has been inadequate he will not hesitate to take the matter out of their hands altogether.

Chairman,—

I hear that many people are arriving here from Bombay, and taking up their residences in different parts of the town, more especially the quarters of Burra Bazar and neighbourhood. These people do not take tickets direct from Bombay, but break their journey for several days at such places as Jubbulpur, Agra, Allahabad, &c., and then take a ticket from the last station they halt at to Calcutta, in order to avoid suspicion of their coming from Bombay.

As by doing so these people from Bombay elude the vigilance of the police, and consequently the houses in which they reside in Calcutta cannot be kept under sanitary surveillance, I would recommend that the attention of the Government be drawn to the matter in order that measures may be taken which will effectually deal with it.

W. J. Simpson, M.D.,
Health Officer.

January 7, 1897.

No. 9281; dated Calcutta, 9th October 1896.

From the Agent, East Indian Railway Company, to the Secretary to the Government of Bengal, Municipal (Medical) Department.

With reference to your letter No. 887 T. M., dated 6th October 1896, regarding the bubonic plague in Bombay, I have the honour to enclose copies of instructions issued to the Medical and Traffic Departments of this Railway, and to state that it was decided to have the scrutiny of passengers made at Allahabad instead of Jubbulpur in consequence of the fast trains that would carry Bombay passengers passing the latter station at night, when any scrutiny of passengers would be generally inconvenient. I would, however, support the proposal of his Honour the Lieutenant Governor, North Western Provinces and Oudh, to have a scrutiny of passengers at Itarsi, and a suggestion practically to this effect has already been made by me to the Chief Commissioner, Central Provinces, in reply to a letter from that officer on the subject of the examination of railway passengers.

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* From Central Provinces, No. C.—72, dated 13th October 1896.
From North-Western Provinces, No. 286, dated 8th October 1896.

Dated 1st October 1896.

From the GENERAL TRAFFIC MANAGER, EAST INDIAN RAILWAY, to the DISTRICT TRAFFIC SUPERINTENDENTS, HOWRAH, ALLAHABAD, AND TUNDLA.

Supposed Bubonic Plague in Bombay.

IN order to prevent the spread of disease to stations served by the East Indian Railway the Agent has directed that a native doctor, with knowledge of the symptons, shall, on arrival of trains from the Bengal-Nagpur Railway, the Jubbulpur line and the Indian Midland Railway at Asansol, Allahabad, and Tundla, accompany the ticket collectors on their rounds with a view to detect cases of the disease.

Ticket collectors are to afford every assistance to the native doctor in obtaining access to passengers. The doctor will probably only wish to see passengers holding tickets from Bombay, and a note should be kept of the compartments in which these passengers are travelling, and the attention of the doctor specially drawn to them.

Should any cases be detected, the staff are to act under the orders of the Medical Department as to removal of the passengers and treatment of their luggage.

The carriage in which any case may be detected is to be detached and thoroughly disinfected. The passengers who have been travelling in the compartment in which a case has been detected are to be accommodated by themselves, and no other person is to be admitted to the compartment. The names and addresses of these passengers are to be taken and sent by the same train to the station master of destination, who is also to be wired to expect the passengers. The guard is to be clearly instructed that the passengers are to be kept to themselves, and all changing stations wired forward, giving number of carriage and compartment. A reserved label should be affixed to the compartment.

In consequence of suspicious cases of bubonic plague having occurred at Bombay, it is desirable that officers of the Medical Department should assist other authorities concerned by every means in their power to prevent the dissemination of the disease. The Officiating Chief Medical Officer would therefore request medical officers to take the following precautions:—

(1.) On each district one native doctor must inspect all trains from Bombay. At Allahabad and Asansol special men have been told off for this duty.

(2.) In the event of any suspicious case being found, the patient must be removed at once to the Contagious Diseases Hospital, and the carriage in which the person was travelling must be cut off and disinfected.

(3.) The patient's fellow-passengers should be removed to an empty carriage into which no one else should be admitted, and this carriage also should be cut off and disinfected at the first station where there is a medical officer or native doctor after the last passenger has left it.

(4.) The addresses of all passengers travelling in the carriage must be taken and telegraphed to the station masters at their destination for the information of the local authorities.

(5.) While in hospital every precaution must be taken to isolate the patient completely, and for this the assistance of the police should be obtained, if necessary.

(6.) On leaving hospital, the patient's clothes must be burnt, also all bedding, &c., and the hospital must be disinfected.

(7.) The medical staff will take the same precautions regarding disinfection of themselves as they would when attending a case of small-pox.

(8.) All cases to be immediately reported to the chief medical officer.

(9.) The medical staff are requested to pay increased attention to the sanitation of their stations.

(10.) The officiating chief medical officer will be very pleased to consider any suggestions the medical staff may have to make on the subject.

Enclosure No. 10.

No. 938-T.—M., dated Darjeeling, 10th October 1896.

From H. H. Risley, Esq., c.i.e., Secretary to the Government of Bengal, Municipal Department, to the Secretary to the Government of India, Home Department.

I am directed to submit, for the information of the Government of India, the accompanying copy of a resolution of this date, recorded by the Lieutenant Governor, regarding the measures adopted for the prevention of the bubonic plague in Bengal.

Measures for Prevention of Plague.

Municipal Department.—Darjeeling, 10th October 1896.

Resolution—No. 937T.—M.

In the Government letter No. 770T.—M., of the 30th September, a copy of which is annexed to this Resolution, the Corporation of Calcutta were addressed on the subject of the reported outbreak of plague in Bombay, and it was suggested that the following measures should be taken under Sections 321 to 334 of the Calcutta Municipal Act:—

(1.) To declare bubonic plague or any form of typhus fever with glandular swellings to be a dangerous disease, regarding any case of which information should at once be communicated to the Commissioners or their Health Officer under Section 321.

(2.) To select a site for a temporary plague hospital away from the main thoroughfares, and to arrange for its prompt erection should the need arise.

(3.) To provide special carts for the conveyance of cases to hospital, and to arrange for the disinfection of both carts and drivers.

(4.) To divide the town into sanitary circles of manageable size, and to place in charge of each a medical inspector, with full powers to carry out the measures ordered by the Commissioners or Government for preventing the spread of the disease.

(5.) To draw up regulations under Section 334 of the Act, in order to give effect to such special measures as might be necessary to prevent, check or mitigate an outbreak of plague.

The corporation were further informed that the Government would be prepared to appoint a medical board to assist the corporation in devising measures to deal with the disease.

2. While trusting that no necessity for the above measures would arise, the Lieutenant Governor expressed his entire approval of the steps taken under the Commissioners' orders to give special attention to the cleansing and sanitation of Calcutta. A copy of the letter was sent to the Commissioner of Burdwan, who was directed to instruct the Magistrate of Howrah to move the municipality to take the necessary action to cleanse and sanitate the town.

3. A case of mild bubonic plague is now reported to have occurred in Howrah, the patient being a Eurasian lad of 17, who arrived from Bombay on the 26th September, and is believed (though this is not certain) to have brought the disease with him. It may be hoped that the case is an isolated one, and that no general outbreak of the disease will take place. But the occurrence of even a single case in a crowded area where the sanitary conditions are such as to favour the spread of contagion, if not actually to generate the disease, convinces the Lieutenant Governor that the time has now come to adopt further preventive measures.

4. It has accordingly been decided to appoint the following gentlemen to form a medical board for the purpose of determining the action to be taken by all executive authorities, whether official or municipal, with the object of preventing and checking the plague throughout Bengal.

Honourable H. H. Risley, C.I.E., Secretary to Government, Financial and Municipal Departments	*President.*
Honourable P. Playfair, C.I.E.	*Members.*
Honourable J. G. H. Glass, C.I.E., Chief Engineer	
Surgeon-Colonel Ross, Inspector-General of Civil Hospitals	
Surgeon-Captain Dyson, Sanitary Commissioner	
Dr. Mahendra Lal Sirkar, C.I.E.	
Surgeon-Captain Robson-Scott, Officiating Deputy Sanitary Commissioner, Presidency Circle	*Secretary.*

5. All cases of illness which are believed to be plague should at once be reported to the Board by the magistrate of the district where they occur, and in Calcutta by the Health Officer of the Corporation. The orders issued by the Board on matters affecting health and conservancy should be deemed to be the orders of Government and carried out with all possible despatch by all executive authorities. Steps will hereafter be taken, if necessary, to legalise all action taken during the present emergency. Nothing should meantime prevent the Board from ordering or the executive authorities from carrying out any reasonable measure of precaution, segregation, or disinfection which may appear called for.

6. The areas which the Board will have in the first instance to deal with in order to arrest the spread of the plague, are the following:—

(1) The Town of Calcutta.
(2) The Port of Calcutta.
(3) The Municipality of Howrah.
(4) The small municipalities adjacent to Calcutta and Howrah.
(5) The lines of railway.

7. *The Town of Calcutta.* The plague has already been declared to be a dangerous disease under Section 321 of the Municipal Act, and it is further understood that the measures indicated in the Government letter of 30th September have already been adopted, or are in course of adoption, by the Corporation. The Commissioners have asked the Government to select for them a chief superintendent to organise and control the conservancy and nuisance branch of the Health Department for three months, on a salary of 1,000 rupees per month. Dr. Banks, Civil Medical Officer of Puri, who possesses in a high degree the requisite qualifications, has been appointed to the post, and directed by telegram to join at once. Sites have been selected in Maniktola for an isolation hospital and a special burning-ghat and burial-ground for plague patients. The town is being divided by the Health Officer into sanitary circles, and the regulations under Section 334 of the Act are about to be submitted for the sanction of Government. The Lieutenant Governor feels sure that the Commissioners, the executive officers of the Corporation, and their subordinates will work cordially with the Medical Board, and carry out promptly and fully all the recommendations of that body.

8. *The Municipality of Howrah.*—The chairman of the municipality has been instructed by telegram to isolate the patient now suffering from the plague, to destroy his clothes, and to disinfect the house in which he has been living. The municipality have asked by telegram for the appointment of an officer of the rank of Surgeon Captain as Health Officer of the town, on a salary of 1,500 rupees a month and carriage allowance; but the Lieutenant Governor considers that the needs of Howrah can best be met by transferring the present Civil Surgeon, who is in weak health, to a lighter station, and deputing a younger officer, Surgeon Major Walsh, to carry on the combined duties of Civil Surgeon and of Health Officer, with the assistance of an experienced supervisor of the Public Works Department, who will receive 500 rupees a month, with horse allowance and house rent. The Deputy Sanitary Commissioner of the Western Circle was ordered to Howrah to assist in sanitary measures two days before the case of plague was reported to Government.

9. *The adjacent Municipalities.*—The chairmen of the municipalities noted below* should now report to the Medical Board, through the magistrate of the district, what

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*Hooghly Chinsurah	In Hooghly district.
Serampur	
Uttarpara	
Baidyabati	
Bhadreswar	
Kotrang	
Bansberia	
Bally	In Howrah district.

Cossipore Chitpur	In the 24-Parganas.
Maniktola	
Baranagar	
South Suburban	
South Dum-Dum	
North Dum-Dum	
South Barrackpore	
North Barrackpore	
Baraset	
Naihati	

steps they propose to take to prevent the plague spreading to their jurisdictions. The Deputy Sanitary Commissioner will be directed to visit these municipalities as soon as possible, and to explain to the chairmen personally what ought to be done.

10. *The Port of Calcutta.*—The Government of India have been moved by telegram to sanction the introduction, with such modifications as may be necessary, of the revised rules for quarantine against plague which were introduced in August 1894 for the protection of Calcutta from the importation of plague from Hong Kong. It has also been suggested that, under Section 19 of the Sea Customs Act, the export of rags and second-hand clothing from Bombay should be prohibited. Steps are being taken to provide accommodation for plague patients near the quarantine anchorage at Diamond Harbour, and all suspected vessels will be carefully examined and disinfected by the Port Health Officer before communication with the shore is permitted.

11. *The Lines of Railway.*—Under Section 71 of the Railway Act IX of 1890, a railway administration may refuse to carry persons suffering from any infectious or contagious disease; and, under Section 117, any such person may be removed by a railway servant from the carriage in which he is travelling. On the 1st October the Governor of Bombay was asked by telegram whether, in the event of the disease increasing, he would be prepared to move the railway company to prevent suspected persons from leaving Bombay by rail; and on the next day his Excellency replied that the municipal and railway authorities were in consultation, and that if the disease increased the necessary measures would be taken. The East Indian Railway have already posted native doctors at Asansol, Allahabad, and Tundla to scrutinise all passengers, especially those coming from Bombay, while tickets are being checked. The Assistant Superintendent of Emigration at Raniganj and Asansol has been instructed to give all possible assistance to the railway officials in the matter. The Government of the North-Western Provinces and Oudh, and the Administration of the Central Provinces, have also been addressed on the subject.

ORDER.—Ordered, That copies of the resolution be forwarded to the members of the Medical Board named in paragraph 4, the Chairman, Calcutta Corporation, the Commissioner of Police, Calcutta, the Bengal Chamber of Commerce, the Trades Association, Calcutta, all Commissioners of Divisions, all magistrates (direct), and to the Marine Department.

Ordered also, That the Resolution be communicated to the Government of India, Home Department.

Ordered further, That the Resolution be communicated to newspapers and published in the "Calcutta Gazette."

By order of the Lieutenant Governor of Bengal.

H. H. RISLEY,
Secretary to the Government of Bengal.

No. 770 T.—M., dated Darjeeling, 30th September 1896.

From H. H. RISLEY, Esq., C.I.E., Secretary to the Government of Bengal, Municipal Department, to the CHAIRMAN OF THE CORPORATION OF THE TOWN OF CALCUTTA.

I AM directed to acknowledge receipt of your letters* noted below, regarding the reported outbreak of plague in Bombay, and in reply to forward, for the information of the Commissioners, copies of a telegram despatched by this Government to the Government of Bombay, and of the replies thereto. The telegram of to-day's date from His Excellency the Governor shows that the character of the disease is still open to question; that active measures are being taken by the Bombay Government to deal with it; and that all unnecessary panic or excitement regarding it is much to be deprecated. At the same time it is obviously desirable to take every reasonable precaution to prevent any outbreak of the disease in Calcutta, and to detect at the earliest possible moment any cases that may occur. Under the provisions of Section 37 (5) (*h*) of Bengal Act II of 1888, the preventing or checking the spread of dangerous disease is one of the obligatory duties of the Municipality, and Sections 321 to 334 of the Act contain the detailed provisions of law on the subject. The Lieutenant Governor will be quite ready to sanction any measures which the Commissioners may desire to initiate under those sections. To begin with, it appears desirable to declare that bubonic plague or any form of typhus fever with glandular swellings is a dangerous disease, regarding any case of which information shall at once be communicated to the Commissioners or their Health Officer under Section 321.

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* No. 4042, dated the 25th September 1896. No. 4056, dated the 26th September 1896.

2. The next step is for the Commissioners to select a site for a temporary plague hospital away from the main thoroughfares, and to arrange for its prompt erection should the need arise. The hospital should be built of matting and T-iron or bamboos in blocks to contain 10 patients each. Provisional contracts could no doubt be arranged for the rapid construction of such a building if required.

3. I am to say, with reference to a query irregularly addressed by the Health Officer to Government direct, that the Campbell Hospital cannot be used for the purposes of a plague hospital.

4. The Commissioners should, if the disease breaks out, have special carts (drawn by bullocks and specially marked) provided, one at each police station, for the conveyance of cases to hospital. Provision for disinfecting both carts and drivers in the vicinity of the hospital after each journey would be necessary.

5. If the disease appears the town will have to be divided into sanitary circles of manageable size, and a medical inspector placed in charge of each, with full powers to carry out the measures that may be ordered by the Commissioners or Government for preventing the spread of the disease. Action under Section 334 of the Act will then be necessary, and the Government will be prepared to appoint a medical board to assist the municipality in devising measures to deal with the outbreak.

6. The Lieutenant Governor trusts, however, that no necessity for such measures will arise. Meantime he entirely approves of the steps that are being taken under the Commissioners' orders to give special attention to the cleansing and sanitation of the town. The municipality of Howrah will be directed to take similar steps.

7. It is premature at present to propose any interference with or medical inspection of railway passengers. Orders on the subject of arrivals by sea will be
Marine Department.

Enclosure No. 11.

NOTE on the CASES reported as PLAGUE in CALCUTTA.

THE following 11 cases have been reported to the Medical Board as cases of bubonic plague in Calcutta, besides several cases in the fort, which, on inquiry, proved to be ordinary non-venereal buboes :—

* One case in Howrah.
* One case in Chatawallah-lane.
* Two cases in Maniktolla Hospital.
Two cases in the Presidency General Hospital.
* One case in Raja Raj Bullub-street.
* One case in Armenian-street.
One case in Wooltadanga.
One case in Garden Reach.
One case in Warris Bagan-lane.

In the cases marked with an asterisk the plague bacillus is sa
in the blood of the persons attacked. Three others were found to be cases of simple enlarged glands, fever and bronchitis and intestinal obstruction respectively. The result of the examination of the blood of the two cases in the Presidency General Hospital is not known to us. As a full history of all these 11 cases is contained in the Appendix to this Report, it is not necessary to recapitulate them here, and a summary of the conclusions drawn from these will therefore be sufficient in this place.

The bacillus is also said to have been identified in the case in Raja Raj Bullub-street which terminated fatally. The case was first reported by a homœopathic practitioner to the Health Officer of Calcutta by postcard on the evening of the 2nd November. It was seen by Drs. Cobb and Simpson on the 3rd at 5.30 p.m., and the man died in their presence at 6.30 the same evening. They reported it "as a fatal case of true plague." The Board of Health did not hear of this case till the following day, after the body had been disposed of, and then only from private information. An interval of nearly 20 hours occurred between the time the case was first seen by the homœopathic practitioner and the time it was inspected by Drs. Cobb and Simpson. It is to be regretted that Drs. Cobb and Simpson did not call in one of the medical members of the Board, who would have been only too willing to go and see "a true case of plague." The omission is the more unfortunate because doubt had arisen in the public mind regarding the diagnosis of the previous cases. Drs. Dyson and Robson-Scott, however, as soon as they heard of the case, proceeded to the spot and made minute inquiries concerning it, with the result that it was clear that other reasons existed for the enlargement of the glands in the groin, which was reported to be one of the prominent features of the case.

The most noticeable point in the suspicious cases that have occurred is the fact that all the patients in whose blood the plague-germ is said to have been found recovered, with the single exception of the case in Raja Raj Bullub-street, and in this case, as already stated, the symptoms noticed can reasonably be ascribed to other causes. Another remarkable fact is that none of these six sporadic suspicious cases produced any infection either in the neighbourhood or even among the people who attended the sick.

Looking only to the clinical symptoms set forth in the Appendix to this Report, we have no hesitation in expressing our emphatic opinion that none of these cases, including the fatal case of Bipin Behari Dutt, can properly be described as cases of bubonic plague. It may be inferred, however, from the reports which have come before us, that the diagnosis made by the Health Officer and Dr. Cobb is based not so much upon the symptoms of the patients as upon the supposed presence in their blood of a microscopic organism stated to be "the plague bacillus." We propose, therefore, to examine the evidence bearing on this point, and to state how far the conclusions arrived at by Drs. Cobb and Simpson are borne out by the independent investigations carried on by our colleague, Dr. Cunningham.

Dr. Cunningham has received from M. Haffkine a type-culture and several microscopic preparations of the plague bacillus as occurring in Bombay. These agree in their characters with those described as characteristic of the plague bacillus as found in China, and there can be no reasonable doubt that the Bombay bacillus is the same as that which is regarded by M. Yersin and Professor Ketasato as the specific cause of plague.

Dr. Cunningham has also personally obtained 20 microscopic preparations and 15 cultures of blood from seven distinct cases of supposed plague, six of which occurred among men in the Shropshire Regiment. The microscopic preparations show nothing, except that some of the subjects suffered from anæmia; while the cultures have without exception remained absolutely sterile.

A series of cultures and preparations of local origin was received by Dr. Cunningham from Drs. Simpson and Cobb. None of these exhibit the characters of the standard type. In one case only does the growth in the form of colonies present some similarity to that of the type specimen; but in this case the microscopic characters do not resemble those of the Bombay bacillus. In another case the culture yielded an absolutely pure growth of a large *staphylococcus*, which is of common occurrence in the air; while the corresponding blood preparation showed evidence of contamination from other sources in the presence of a certain number of slender bacilli. In a third culture there was a pure growth of a form of *schizomycete*, or fungus, of which neither the colonies nor their constituent elements bore the remotest resemblance to the plague bacillus. A fourth culture, prepared from the blood of Bipin Behari Dutt, contained large bacilli, probably of a putrefactive character, along with minute *cocci* and *diplococci*; but in the microscopic preparation of the blood only the large bacilli could be recognised. The remaining cultivations of local origin are pure cultivations of *cocci* and *diplococci*, not agreeing in character with the type specimen, and not distinguishable from forms which are liable to occur in and on almost any organic medium as the result of contamination. As the phenomena of three out of the four cases expressly referred to above furnish conclusive evidence that actual contamination occurred, there is no certain proof that in the remaining cases the minute organisms discovered were really derived from the blood.

In the case of Bipin Behari Dutt, whose clinical symptoms we have already discussed, a specimen of blood and some blood-cultures were sent to Dr. Cunningham, together with portions of a rat into which two cubic centimetres of a culture of blood had been injected, causing its death after 31 hours. The specimen of blood and the cultures showed, as has been mentioned above, unequivocal evidence of contamination by the presence of large bacilli, probably of a putrefactive character, which must have gained access to the preparation from outside.

This being so, it is clear that the smaller *cocci* and *diplococci*, which were also found, may equally have been the result of contamination. Nor does the death of the rat after inoculation afford any grounds for inferring the specific character of the germs contained in the culture with which the animal was inoculated, for the bulk of actively decomposing fluid injected into the animal was relatively equivalent to over a pint in the case of an adult human being, and was quite sufficient to cause death by mere blood poisoning. Moreover, had the enormous number of microscopic organisms introduced into the rat possessed the specific character attributed to them, the blood and tissues ought after death to have absolutely swarmed with the organisms, whereas, in fact, only a very scanty sprinkling of minute *cocci* and *diplococci* could be found in the specimens submitted to Dr. Cunningham.

Looking to the evidence as a whole, we have no hesitation in expressing our opinion that there is no evidence that any case of true bubonic plague has yet occurred in Calcutta; and that the cases which have been reported to us as plague were so described on the strength of an opinion as to the origin and character of certain microscopic organisms, which has not been confirmed by the results of an independent inquiry conducted by an expert of long experience in bacteriological research.

H. H. RISLEY,
Secretary to Government,
Municipal and Medical Departments.
J. G. H. GLASS,
Secretary to Government, Public Works
Department.
G. C. ROSS,
Inspector-General of Civil Hospitals.
P. PLAYFAIR,
Sheriff of Calcutta.
D. D. CUNNINGHAM,
Professor of Physiology, Medical College.
H. J. DYSON,
Sanitary Commissioner, Bengal.

REPORTS ON SUSPECTED CASES OF PLAGUE.

CASE NO. I.—REPORTED CASE OF PLAGUE AT HOWRAH.

A telegram was received by Mr. Risley on the 9th October, stating that a case of Pestis Ambulans had occurred in Howrah.

Telegram, dated 10th October 1896.

From Darjeeling to Calcutta.

From Civil Hospitals, Bengal, to Dr. Sanders.

Please keep me regularly informed by wire regarding plague, and instruct all medical officers at Presidency to keep you informed.

Drs. Ross and Dyson left Darjeeling on Sunday, the 11*th October, for Calcutta.*

J. COTTA, a Eurasian, aged 16 $\frac{9}{12}$ years, is a resident of Bombay, living at Byculla, at a distance of nearly three miles from Mandvi. On the 13th September he exposed himself to venereal infection; on the 17th he noticed local sores, and on the 19th that the glands of both groins were a little enlarged and slightly tender. He left Bombay on the 25th in company with his sister and her children, arriving in Howrah on the 26th. He lived in a small house in Punchanuntollah in company with his sister and children.

On the 2nd October he went to the Howrah General Hospital, under the assumed name of Nadoo, and was treated by Mr. Milchem, the apothecary, who diagnosed soft sores and prescribed "blackwash." At that time he had tender glands and slight fever. He returned on the 4th. The sores were better, but not quite healed; the buboes were painted with iodine; he said his fever had gone. On the 7th he again went to hospital, and was advised to become an in-patient for the further treatment of the buboes. He was directed to become a paying in-patient. He then went to the Medical College. About this time suspicion seemed to have been roused about him.

S. B. Ghosal, Native Doctor to the East Indian Railway, who is at the Howrah General Hospital, states that on the 8th he was ordered by Dr. Tomes to go to Punchanuntollah to see Cotta at his house, and found him suffering from fever, with a temperature of 102° F., and swollen inguinal glands. He was visited the same evening by Drs. Tomes and Simpson; the latter aspirated blood from the finger and from the buboes for bacteriological examination. On the following days Drs. Cobb, Tomes, and Simpson signed a certificate, stating that plague bacilli had been found in the blood of Cotta.

On the 11th, at the request of Dr. Ross, Inspector-General, Civil Hospitals, Cotta was examined by Dr. Sanders, who sent a telegram to Dr. Ross as follows:—

"Have seen Cotta; a typical case of syphilitic buboes; no fever; no cause for alarm."

On the 11th he was removed into the building provided by the municipality for plague cases, his sister and a small boy accompanying him.

On the 12th he was examined by Drs. Ross and Dyson, who had just arrived from Darjeeling. Dr. Sanders also went with them.

They found him in the infectious hospital. It is situated on the road to Andul, and is a small cutcha-pucka house of two rooms, with a square walled court-yard.

Both he and his sister were complaining bitterly of having been removed there. The place was full of flies, and the amount of ventilation scanty. On examination he was found to be in full possession of his senses—no headache, tongue clean, appetite good. He had inflamed glands in both groins, and stated that he had been put to considerable pain by being conveyed to the building in a gharry. His temperature was 102° F. This can easily be accounted for by the commencing suppuration in the buboes; the soft sores had completely healed. He had not received any clothes or food from Bombay since his arrival in Howrah. A consultation was held at once, and Dr. Sanders expressed his willingness to take the case into the Mayo Hospital for further treatment of the buboes. It was decided, however, to take him back at once to the infectious ward of the General Hospital at Howrah. This place was selected to avoid causing panic among the patients in the main body of the hospital.

He was visited again on the morning of the 13th by Drs. Ross, Sanders, Dyson, Vaughan, Tomes, and Mr. Maguire. He was very cheerful, tongue clean, eyes clear, no headache, pain less in the buboes. He expressed great satisfaction at the change of residence, and said he was all right. There were in the same room with him, his sister, a boy, and a female friend. The bubo on the left side showed slight deep fluctuation. It has been decided that when this is opened, some of the pus will be sent to Dr. Simpson for examination.

Dr. Ross deputed Dr. Leahy (who has had personal experience of plague in Bagdad), the same day to visit Cotta and report upon his condition. He visited him at once, and wrote as follows:—

"In accordance with your orders, I visited and made a careful examination of the man Cotta this afternoon at the Howrah Hospital. His condition bears no resemblance clinically to the cases of plague I saw in Bagdad. Of the two inguinal buboes, the left one is apparently undergoing suppurative changes, and to this I attributed his temperature 101° this afternoon. I have suggested the desirability of inoculating a spot on the abdominal wall with some of the pus from the bubo, when he opens it, with a view to finding out whether it will produce a soft chancre at the point of inoculation. We carefully examined Cotta's urine, with the following result:—Clear, amber coloured, acid in re-action, specific gravity 1,020 phosphates present, *no albumen*.

On the same day Drs. Ross, Sanders, Dyson, Tomes, and Vaughan examined the house in which Cotta had lived previous to his removal to hospital. It is a small cutcha-pucka house, with cramped rooms, involving constant contact in its inhabitants. It had not been fumigated or disinfected, or whitewashed up to that date. Cotta's sister and the other people living in it evinced no fear of infection from living in it, and ridiculed the idea. In the same mohulla (Punchanuntollah) a case of plague had been reported that morning, and was immediately inspected by the doctors named above.

The patient was a Mussalman child, a little more than one year old. It had an enlarged gland in the right armpit, and a smaller one in the groin on the same side. Its temperature was 100°. It was said to have been ill for five days. The child did not appear to be suffering any great physical inconvenience, and its eyes were clear and bright, and the expression of the face cheerful. A local practitioner, who was standing by, stated, "that it was by no means uncommon for people to get enlarged glands and fever in Howrah at the end of the rainy season."

Remarks.—Reviewing the case of Cotta, the only reason for supposing that he is suffering from plague (*Pestis ambulans?*) is the fact that plague bacilli have been found in his blood. I am not skilled bacteriologist enough to decide whether they are the real bacilli or not, and would like the opinion of some other bacteriological expert, say Dr. Cunningham. On the other hand, we have a clear history of venereal infection with the enlargement and final suppuration which is so commonly a sequel. He has never suffered from any other symptoms resembling plague. His appetite has been good. His tongue is clean after nearly a month's illness; he has never suffered from frontal headache, delirium, high fever, hæmorrhage, or epistaxis, injection of the conjunctivæ; the enlarged glands have never caused severe pain; in fact, he has had none of the classical symptoms of plague. I am aware that there is a very mild form of plague called the "ambulatory form," in which the symptoms are of the slightest. This form of disease is generally held to be non-infectious.

With regard to the native practitioner's statement, that at certain times of the year people in Bengal suffer from enlarged glands, the remarks of Surgeon-Colonel May, A.M.S., in his Annual Return for 1895, possess great interest.

He says:—"There were 43 admissions for disease of the lymphatic system, of which 37 were for inflamed lympth glands of the groin. It would seem that there must be some climatic (malarial?) influence at work in the production of this disease, as it is of such frequent occurrence, and no other cause is assignable; many of them run a long course, and have to be scraped or removed before recovery takes place."

The above statement indicates that extreme caution should be exercised before the mere existence of enlargement of the inguinal gland should be regarded as pathognomic of plague.

H. J. DYSON, F.R.C.S.,
Sanitary Commissioner.

Telegram, dated 11th October 1896.

From Howrah to Darjeeling.

From Sanders to Hospitals, Bengal.

HAVE seen Cotta—a typical case, syphilitic buboes. No fever. No cause for alarm.

Letter from Surgeon Lieutenant-Colonel SANDERS.

36, Chowringhi,
October 11, 1896.

DEAR DR. ROSS,

I GOT your telegram this morning at 10 a.m., and at once went to Howrah. I saw and carefully examined J. Cotta.

History.—He lived with his parents in the Byculla quarter of Bombay, said to be three miles from Mandvi; he never went to Mandvi.

He left for Calcutta on 23rd September and travelled in the same carriage with his sister and her children, arriving at Calcutta on the 26th. The sister and the children have remained perfectly well. On 2nd October he went as an out-door patient, giving the assumed name of Maddox, to the General Hospital at Howrah.

The Assistant Surgeon, Mr. Mitchell, found that he had a sore on his penis and buboes. He gave him blackwash for the sore, and I forget what for the buboes (Cotta's statement). On October 7th he applied for admission to the hospital as an in-door patient, and said his sister would pay for his keep. He was told to get a letter from his sister, and went away, not returning to the hospital. On October 8th a police report was sent that there was a suspicious case of fever with buboes. This Mr. Cotta was then examined by Dr. Tomes first, and then by Dr. Tomes, Dr. Cobb, and Dr. Simson; and they pronounced the disease to be bubonic plague.

Present condition: Sunday, October 11th.—Found dressed and sitting in a chair; no fever; no symptoms of having been ill. Temperature normal. Pulse quiet and regular.

Tongue clean; appetite good. On each side of the abdomen above Poupart's Ligament; a large bubo, one on either side, larger on the left than the right; no sign of suppuration, and but very little pain on pressure. Admits having been with girls in Bombay, and to have had a sore first, followed by these buboes.

On the inner side of the arms and on the front of the forearm, on the right side, a very suspicious rose rash, faint when seen by me, but stated by his sister to be much more marked when he gets warm. It looks very like a commencement of the rash secondary syphilis.

I am sure the case is nothing more than an ordinary bubo, following a chancre on the penis.

I have never seen a case of plague, but I am sure I cannot be mistaken in an ordinary case of syphilitic bubo.

If any case of plague is reported, I will personally see it, and wire you the result.

P.S.—I am willing to take all responsibility for this report, and to treat the man in he Mayo Hospital.

Dated Calcutta, 15th October 1896.

Demi-official from Surgeon-Major R. COBB, Officiating Surgeon Superintendent, Presidency General Hospital to the INSPECTOR-GENERAL OF CIVIL HOSPITALS.

THE first case I saw was Cotta. Dr. Simpson and I examined the blood and found characteristic diplobacteria, similar to those described in works on Bacteorology and exactly like those in Dr. Simpson's possession from Bombay.

They were also found in the serum drawn from the gland.

2. Similar bacteria were found in the blood in the case of Grace Hodges who had glandular enlargements with fever.

3. Also in the case of the boy Heman Shaw.

P.S.—Dr. Simpson had the notes, so I was unable to reply to yours at once.

Dated Howrah, 12th October 1896.

From Surgeon-Major A. TOMES, Officiating Civil Surgeon, Howrah, to the MAGISTRATE OF HOWRAH.

WITH reference to your letter of yesterday on the subject of Mr. Cotta's illness and Dr. Sanders' opinions, I am still strongly of opinion that the case is one of pestis ambulans, the mild form of plague.

Dr. Cobb, Dr. Simpson, and myself thoroughly examined the young man, having specially in view at the time any possibility of syphilis, and, after careful consideration, came to the conclusion that the case was not one of syphilis.

I may mention that at the commencement of plague medical men have at times mistaken the glandular swelling in the groin for syphilitic buboes, and in this case Dr. Sanders appear to have fallen into that error.

I feel it is my duty to warn you that this case is not syphilis, but plague, and that if the patient had not been isolated, he would be a danger to the community.*

Dated Calcutta, 12th October 1896.

Memorandum by Surgeon Major A. TOMES, Civil Surgeon, Howrah.

COPY forwarded to the Sanitary Commissioner, Bengal, for information.

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* NOTE.—The Board did not call this a case of syphilis, but called it a case of venereal infection.

Dated Calcutta, 15th October 1896.

From the INSPECTOR GENERAL OF CIVIL HOSPITALS, BENGAL, to HIS HONOUR THE LIEUTENANT GOVERNOR.

WE have examined four reported plague cases. In our opinion, Howrah case is venereal bubo, one child, Howrah, abscess in armpit. In Maniktola two cases, ordinary fever. No case has any clinical appearance of plague. Letter follows.

No. 999, dated Howrah, 15th October 1896.

From Surgeon Major J. H. T. WALSH, Officiating Civil Surgeon, Howrah, and Secretary of the Howrah General Hospital, to the INSPECTOR GENERAL OF CIVIL HOSPITALS, Bengal.

I HAVE the honour to report that there is no fresh case resembling bubonic plague in Howrah, and all necessary precautions are being taken.

No. 1004, dated Howrah, 16th October 1896.

From Surgeon Major J. H. T. WALSH, Officiating Civil Surgeon, Howrah, to the INSPECTOR GENERAL OF CIVIL HOSPITALS, Bengal.

I HAVE the honour to report that there is no fresh case resembling bubonic plague in Howrah, and all necessary precautions are being taken.

No. 1005, dated Howrah, 16th October 1896.

From Surgeon Major J. H. T. WALSH, Officiating Civil Surgeon, Howrah, to the INSPECTOR GENERAL OF CIVIL HOSPITALS, Bengal.

SINCE my arrival here on Tuesday, I have done my best to become acquainted with the history and symptoms of the case of Mr. Cotta. He arrived in Howrah on September 26. On September 28 he suffered from "fever," and then attention was called to the fact that he was also suffering from large buboes in both groins. There is a history of unclean coition, and the appearance of some small sores on the prepuce about September 16. Mr. Cotta left Bombay on September 23, and at that time the glands in the groin were somewhat enlarged. In the same railway carriage there travelled his sister and other persons. These persons have shown no signs of illness, nor is there any evidence that any of them had been exposed to the danger of plague contagion in Bombay. A boy of about ten years of age has been in close attendance on Mr. Cotta, both in the plague hospital and in the isolation ward of the Howrah General Hospital. This boy is in excellent health. I cannot here enter into details, but I have very good reasons for considering that the case is not one of syphilis. So far, and in the absence of other evidence, I should at once accept these buboes as the result of infection from venereal sores, and no question of the "bubonic plague" would exist. The Health Officer of Calcutta examined the patient's blood, and in it he found a variety of diplococcus resembling, though perhaps not identical with, the micro-organisms found in the cases of plague in Bombay. I have been able, through the courtesy of Dr. Simpson, to examine a number of slides, including specimens from Bombay. I am also acquainted with the drawings made of the bacillus found by Yersin in cases in Hong Kong. Although, from a clinical point of view, I am inclined to believe that no case of true virulent bubonic plague has as yet appeared in Howrah, I think that in Mr. Cotta's case further independent bacteriological researches should be made. Mr. Cotta's case may be, as I have seen stated, a mild case of "pestis ambulans," but whether identical with the plague, as I understand that disease, has yet to be proved. The ways of the bacteriologist are full of difficulties, and we may be dealing after all with some new form of disease.* One point is, I think, clear, that there is no occasion for any panic, and that any attempt to make the people over anxious is to be deprecated. At the same time, so long as the plague continues in Bombay, the same care should be taken to detect and prevent it in Calcutta. It is better even to err on the side of over-carefulness. Mr. Cotta is doing well, the buboes will in course of time suppurate, and the final treatment will be surgical.

No. 1010, dated Howrah, 17th October 1896.

From Surgeon Major J. H. T. WALSH, Officiating Civil Surgeon, Howrah, and Secretary of the Howrah General Hospital, to the INSPECTOR GENERAL of CIVIL HOSPITALS, Bengal.

I HAVE the honour to report that there is no fresh case resembling bubonic plague in Howrah, and all necessary precautions are being taken. Mr. Cotta is doing well.

No. 1013, dated Howrah, 18th October 1896.

From Surgeon Major J. H. T. WALSH, Officiating Civil Surgeon, Howrah, to the INSPECTOR GENERAL of CIVIL HOSPITALS, Bengal.

I HAVE the honour to report that there is no fresh case resembling bubonic plague in Howrah, and all necessary precautions are being taken. Mr. Cotta is doing well. This morning it was reported to me that a syce in the employ of a European gentleman in Howrah was suffering from plague. I visited the case at once, and found the man suffering from gonorrhœa with orchitis.

No. 1023, dated Howrah, 20th October 1896.

From Surgeon Major J. H. T. WALSH, Officiating Civil Surgeon, Howrah, to the INSPECTOR GENERAL of CIVIL HOSPITALS, Bengal.

I HAVE the honour to report that there is no fresh case resembling bubonic plague in Howrah, and all necessary precautions are being taken. Mr. Cotta is doing well. Specimens of blood were taken this morning for examination by Brigade Surgeon Lieutenant Colonel D. D. Cunningham.

16th. Have again inspected all cases. All doing well, except Heman Shah; weak, but no fever or bubo.

20th. Cotta was put under chloroform, and the left bubo was incised, and four cultivations, and two slide preparations of his blood were taken.

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ta's case in some of its aspects resembles mild cases reported from Yunnan.—J. H. W.

No. 1027, dated Howrah, 21st October 1896.

From Surgeon-Major J. H. TULL WALSH, Officiating Civil Surgeon, Howrah, to the INSPECTOR-GENERAL of CIVIL HOSPITALS, Bengal.

I HAVE the honour to report that there is no fresh case resembling "bubonic plague" in Howrah, and all necessary precautions are being taken. Mr. Cotta is doing well. Kindly let me know if he may be removed from the isolation ward.

Dated Calcutta, 23rd October 1896.

From Surgeon-Captain H. J. DYSON, F.R.C.S., Sanitary Commissioner for Bengal, Acting Secretary to the Medical Board, to the CIVIL SURGEON of Howrah.

WITH reference to your letter No. 1027, dated the 21st instant, asking for instructions as to whether Mr. Cotta, who is said to be doing well, may be removed from the isolation ward, I have the honour to say that in a matter of this kind you should use your own discretion.

No. 1030, dated Howrah, 22nd October 1896.

From Surgeon-Major J. H. T. WALSH, Officiating Civil Surgeon, Howrah, and Secretary of the Howrah General Hospital, to the INSPECTOR-GENERAL of CIVIL HOSPITALS, Bengal.

I HAVE the honour to report that there is no fresh case resembling "bubonic plague" in Howrah, and all necessary precautions are being taken. Mr. Cotta is doing well.

No. 1040, dated Howrah, 24th October 1896.

From Surgeon-Major J. H. TULL WALSH, Officiating Civil Surgeon, Howrah, to the INSPECTOR GENERAL of CIVIL HOSPITALS, Bengal.

I HAVE the honour to report that there is no fresh case resembling "bubonic plague" in Howrah, and all necessary precautions are being taken. After a careful study of the history of Mr. Cotta's case, I have decided that it was not a case of "bubonic plague." I have removed him from the isolation ward, and his name will not in future appear in these reports. With your permission these reports will cease until a suspicious case does occur.

CASE No. 11.—REPORTED CASE OF PLAGUE AT CHATAWALA GALI.

Reported Cases of Plague which have not been seen.—It was reported that the daughter of an officer in the Preventive Service was suffering from plague, and that bacilli were found in her blood. The parents declined to allow her to be sent to the Isolation Hospital. The following letter from Dr. Panioty throws some light on the case. He writes to the Secretary of the Mayo Hospital as follows:—

"Sir,—With reference to your letter No. 81, dated October 5th 1896, requesting me to inform the Surgeon-Superintendent of any suspicious case, I have the honour to submit for his information the following facts, as the newspaper reports are not correct, regarding the girl Gertie Hodges of Chatawallah Gullee. I have seen Dr. Ferris about the case, and he informs me that when he saw the child on Saturday morning, the 10th instant, there was no fear, and that the child was apparently in as good health as anybody. He did not pronounce the case to be one of mumps, and he told the mother that the child did not want any treatment, as the mother informed him that the swelling had subsided a good deal, and that she painted the neck with belladonna, as the iodine with which she had painted the neck caused the child some pain. Exactly the same symptoms were noticed here. When the child was brought here on the 9th October last, there was no fever, the child was in good health, only that the submaxillary and cervical glands were somewhat enlarged. Belladonna was painted and some medicine given, and the child has never been brought here any more, although the papers say she was brought here on Sunday morning. I examined the child and beyond symptoms noted, there were signs of inherited syphilis, such as well marked Hunterian teeth, enlarged cervical glands, &c. When the medical inspector called on me on the afternoon of the 9th instant, I mentioned the case to him, not as any suspicious case, but one into which he may look, owing to the unhealthy locality from where the child comes. I even told the medical inspector that two or three years ago I had treated the sister for syphilitic sore of one of her legs."

JOHN E. PANIOTY, Resident Surgeon,
Chandney Hospital.

Bacilli were found in the blood by Drs. Cobb and Simpson.

CASE NOS. III. AND IV.—A REPORT ON THE CASES OF PLAGUE IN THE MANIKTOLLAH ISOLATION HOSPITAL OF CALCUTTA.

ON the 13th of October, Drs. Ross, Sanders, and Dyson inspected the Manicktollah Isolation Hospital. Dr. Simpson was invited to attend, but was unfortunately unable to do so, as he did not get the letter in time.

The spot selected for the hospital appears a suitable one, and the erection of hospital sections is being rapidly carried out. There are two native doctors living in the enclosure, in tents, and a small brick building is utilised as a temporary hospital. It contained two cases, one named Tin Cowry Charan Pal, the other Heman Shah.

Tin Cowry Charan Pal is a Hindu boy and works in a jeweller's shop, and is thus brought considerably into contact with Marwaries. He has no history of any accident which might cause enlargement of the glands.

Previous History.—Had lymphatic swelling of the right thigh nine or ten years ago, forming deep-seated abscess, which had to be operated on. In 1895 was first affected with cholera, and then with small-pox; for the last two years since he began to work, he has now and then suffered from fever, cold and swelling of inguinal glands. On the 5th he was attacked by fever, and next day had slight swelling of the inguinal glands, which were a little tender; he was treated for fever. Dr. Cobb and Dr. Simpson examined his blood and found bacilli. He was admitted into the Isolation Hospital on the 11th with a temperature of 103 degrees. On the 12th it was 100 degrees, and on the 13th normal. He was found to be a fairly well-nourished boy of a cheerful appearance, with a clean tongue and clear eyes—no headache. The inguinal glands were slightly enlarged, but not markedly so. His tongue was clean, and he had no other symptoms.

Heman Shah, a boy, is by trade a hawker, and therefore exposed to all vicissitudes of temperature and climate. He was attacked on the 10th, and bacilli were found in his blood. When seen at hospital on the 13th, his temperature was 102, face a little sunken, breathing slightly quickened, eyes clear, no headache, tongue bright red, with the papillæ enlarged and prominent. He has gurgling in the iliac fossæ; the inguinal glands are practically not enlarged. He has symptoms of commencing pneumonia in the left lung, and the rise of temperature may be due to it. He presents the appearance of an ordinary fever case.

Remarks.—If Tin Cowry Charan Pal's case is one of plague, it certainly is a wonderfully mild form. He acquired fever on the 5th, and two days after admission into hospital, where he is carefully treated and fed, is free from fever, and practically has no buboes.

It was decided at a meeting of the Corporation, the Board of Health being present, that these two cases might be discharged from hospital.

CASES NOS. V. AND VI.—THE SUSPICIOUS CASES IN THE PRESIDENCY GENERAL ISOLATION WARDS.

ON October 17th Drs. Ross and Dyson visited the Presidency General Hospital to examine two people who have been placed in the infectious wards as suspicious cases. They are respectively a small male child and a young man. Their histories are as follows:—

The child, three years of age, was born in Sylhet, and has repeatedly suffered from attacks of malarial fever. He has slightly enlarged glands under the jaw and in the armpits and groins, and has also inflamed tonsils. The glands are apparently not tender to the touch. His temperature on Thursday, the 15th, rose to 102 degrees. Present condition: no marked distress in the face; tongue clean; conjunctivæ morbidly white and glistening; no enlargement of the spleen. The child appears to have a scrofulous diathesis. No other symptoms of plague.

The young man, Douglas, is a bridge inspector. He states that he strained himself on the 23rd September, and found that the glands of the left groin were slightly enlarged on the 26th. Five glands in all were enlarged. He continued his work, and walked regularly two to two and a half miles daily. He found that walking made the glands worse. He was admitted into hospital on the 13th October. He then had five enlarged glands; there are now only two; neither are markedly tender. His temperature has for days been normal. He is a poorly-nourished man, with a thin face. His eyes are bright and clear, and he makes no complaint of headache. He has had blood abstracted for bacteriological purposes by Dr. Cobb, but the result is not known. He has been in the infectious ward two days. He looks as if he needed feeding up, otherwise seems healthy enough and comfortable.

The child has left the hospital some days ago; the other case remains under treatment.

CASE NO. VII.—CASE OF PLAGUE REPORTED IN KIDDERPORE.

No. 1123, dated Alipore, October 22, 1896.

From Surgeon Captain H W. PILGRIM, M.B., Officiating Civil Surgeon, 24-Parganas, Alipore, to the SECRETARY, HEALTH COMMITTEE, care of Inspector General of Civil Hospitals, United Service Club, Calcutta.

WITH reference to your Circular No. 47, dated 16th instant, I have the honour to state that the police asked me yesterday afternoon to examine a girl three or four years of age, by name Annoda, residing at Pearatolla, beyond Garden Reach. The case was said to have been reported by a native practitioner, Girish Chunder Ghose, as being a case of plague. I went and examined the child, who had been suffering from slight fever, and now has a few of the cervical and occipital glands enlarged. There was nothing in the symptoms or condition of the child, beyond the slight enlargement of the glands so common in children, to even remotely suggest the presence of plague.

CASE NO. VIII.—CASE OF PLAGUE REPORTED IN RAJA RAJBULLUB STREET.

Extracts from the Commissioner's Report Book, 1st Division Town, Section A, Shampookur, Case No. 4418 of the 4th November 1896.

AT 10 a.m. one K. M. Mukerjee, of No. 252, Upper Chitpur Road, informed by a letter that one Bipin Biharee Dutt is suffering from glandular fever at No. 1, Raja Rajbullub Street. Medical inspector at once informed.

CASE No. 4446 of the 5th instant.

REFERRING to Case No. 4418 of yesterday's date, the medical inspector informed that he, together with Drs. Simpson and Cobb, saw the patient last night, and that they suspect it to be a case of bubonic plague, but they would not give any opinion until satisfied with microscopical examination. The patient died in their presence, and the place had been properly disinfected.

No. 10,638, dated Calcutta, November 6, 1896.

MEMORANDUM by C. B. DRAKE-BROCKMAN, Esq., Officiating Deputy Commissioner of Police, forwarded to the SECRETARY TO THE MEDICAL BOARD for information.

From W. J. SIMPSON, Esq., M.D., Health Officer, Calcutta, to the PRESIDENT OF THE MEDICAL BOARD, dated Calcutta, 5th November 1896.

I HAVE the honour to report a death from plague, which took place at 6.30 p.m. on 3rd November. Information was given to me about 4 p.m. on 3rd November, and the case was visited by Dr. Cobb and myself at 5.30 p.m. The patient died in our presence at 6.30 p.m., and as the friends would not give permission for a post-mortem examination, I ordered the medical inspector to accompany the body to the burning ghât, and to see personally that it was burnt along with the infected clothing. It was impossible to inform the Medical Board in time in order that the medical members should see the case, owing to the man's rapid death. An attack of illness prevented me from reporting the case the next day, but I verbally told Dr. Dyson about it in the morning, and he expressed his intention of making a local inquiry.

The details are as follows:—

History.—Bepin Beharry Dutt, aged 32 years, a sugar-candy maker, residing at No. 1, Raja Rajbullub Street, is stated to have been seized with a sudden attack of headache, fever, pain, and enlargement of the glands of the right groin on 1st November. The pain in the groin became so severe that he was confined to bed and could not straighten his leg. The symptoms increased in severity, and on 2nd November, about 3 p.m., the headache became intense and the abdomen swollen. At 8 p.m. he became insensible. Dr. K. M. Mukerjee states that he was called in at 10 p.m. on 2nd November, and found the patient in a comatose condition, picking at the bed clothes and in high fever, with congested eyes. The glands in the right groin were enlarged. He informed the friends that the case was a hopeless one, and the next morning sent a post-card to the Health Officer reporting the case. Another medical man, Dr. Chatterjee, was called in later, and, it is stated, found the temperature to be 104 degrees. The patient is said to have scalded his toe more than a fortnight ago, but we found no marks on the foot.

Condition on examination by Dr. Cobb, Dr. Mittra, and myself.

The patient was lying insensible, breathing with a sighing and moaning noise. The eyes were sunken and the conjunctivæ very much congested. The direction of the eyes was upwards and to the right. The pupils were contracted and insensible to light. The tongue was furred in the centre and red at the tip and edges. Pulse was 160 and respirations 32 per minute. The body, especially the head, face, and legs, was covered with a profuse perspiration. Petechiæ in large numbers were to be seen on the chest and abdomen, and a few on the back, arms, and legs. They varied in size from one-tenth to one-quarter inch in diameter, and did not disappear on pressure. Both the inguinal and femoral chains of lymphatic glands on the right groin were enlarged. Two of the former and three of the latter were felt to be swollen. In the inguinal region the largest was the size of a boy's marble, and in the femoral that of an almond. Blood was taken from the enlarged femoral gland and from the medium basilic vein. Microscopic examination showed diplobacteria.

NOTES on a Case of reported True Plague seen by Drs. Cobb and Simpson on Tuesday, the 3rd instant.

WE were informed yesterday, the 4th instant, that a case of true plague had been detected at No. 1, Raja Rajbullub Street, on the 3rd instant (afternoon).

The case was seen and reported by Drs. Cobb and Simpson.

No intimation was officially given to the Board of Health until the 5th instant, and this despite the distinct orders upon the subject laid down in paragraph 5 of Government Resolution No. 937 T., dated 10th October 1896.

Having received information from the Honourable H. H. Risley, C.I.E., privately on the 4th instant, we visited the house at once in company with the Ward Medical Inspector (Dr. Mittra).

We found that the room had been disinfected and washed out with carbolic lotion, and that MacDougal's disinfecting powder had been profusely strewn on the floor and in the court-yard. The roof had apparently not been touched, and the woodwork showed no signs of having been washed down. Several apertures in the room had not been properly closed up, and sulphur has ceased to burn (18 hours after death).

The body was cremated, and all clothing and furniture had been burned under the personal supervision of the Ward Medical Inspector (Dr. Mittra).

Statement made by the Employer and by the Friends of the Patient.

The deceased, Bepin Bihari Dutta, was in the employment of a sugar-candy merchant. It was stated that the patient's right big toe had been scalded about a fortnight before his illness commenced. He had done his work as usual, and the effects of the scald had not caused any perceptible lameness, and he was able to walk about, and he never complained of having enlarged glands. On Saturday, the 1st instant, he was unable to go to work, and the reason given was that he was suffering from fever.

Statements by the Medical Practitioners who saw the Case.

On Monday night the family physician, Dr. Mukherji, a homœopathic practitioner, was called in at 10 p.m. He found the patient unconscious, and his temperature was about 104 degrees F. His attention was also drawn to the enlarged glands in the groin. Knowing that bubonic plague was suspected to be in Calcutta, and associating the enlargement of the glands with the high temperature and coma, he formed the opinion that it was a case of bubonic plague. He communicated his suspicions to the police, and eventually Drs. Cobb and Simpson visited the patient. This homœopath stated that he did not notice any petechiæ, but saw a piece of cloth with some native drug on it applied to the enlarged glands. He also stated that, had he had no suspicion of bubonic plague, he would have thought that this case was one of typhus. He evidently did not think there was any difference between typhoid and typhus.

It will be noticed that there was almost an interval of 20 hours between the time when the homœopath first saw the case and when it was visited by Drs. Cobb and Simpson.

He sent a post-card to the Health Officer, reporting the case as one of plague.

Dr. Chatterji (an allopathic practitioner) visited the case about half an hour after Dr. Mukherji had left, and he gave us the following information:—

That a friend of the deceased's (a cooly) had told him that the glands in the right groin had been enlarged for about eight or ten days before the commencement of the illness. He noticed the plaster in the right groin, and found a small ordinary bubo, which had not suppurated, underneath it.

The patient was in a comatose state, and was suffering from fever.

His opinion was that the case was one of low remittent fever; and, as the glands had been enlarged for more than a week, it never struck him that the case could be one of plague. He saw no petechiæ on the body. He found five or six coolies attending the patient and putting ice on his head; also, that he did not think he would be able to recognise the cooly who gave him the information about the bubo. Having elicited this information from Dr. Chatterji, we returned to No. 1, Raja Rajbullub's Street, and endeavoured to discover the cooly mentioned above. By this time the employer and his servants were in a considerable state of apprehension, and were unanimous in stating that practically nobody attended the patient, except very intermittingly, and that the greater part of the nursing was carried out by outside agency. We felt that under the conditions it was hopeless to expect any further information. We also visited Dr. Mukherji's dispensary, but he was out. He subsequently came to us in the afternoon, and his statement is recorded above.

Dr. Mukherji and Dr. Mittra are making enquiries as to where the materials for making the plaster were got from, and when it was applied to the enlarged glands. They are also trying to obtain information regarding the previous history of the case from the deceased's friends.

H. J. Dyson,
Sanitary Commissioner for Bengal.
C. G. Robson-Scott,
Secretary, Medical Board.

Calcutta, November 5, 1896.

FURTHER REPORT ON THE CASE OF "TRUE PLAGUE" REPORTED BY DRS. COBB AND SIMPSON.

ON the 6th we proceeded to No. 1, Raja Rajbullab Street, and found Babu Nolin Bihari Sircar waiting for us.

After a good deal of difficulty and hunting about we managed to find the friend (Behari Lal Das) who had attended the deceased (Bepin Bihari Dutt) during his last illness, and he furnished us with the following particulars:—

I am an intimate friend of the deceased's. I often met him, and I know that he led a fairly loose life. I had not seen him for ten days, when he sent for me on Saturday, the 31st ultimo. He was quite well the last time I had seen him. On visiting him I found that the patient was unable to go to his work. He was unable to walk by himself, so I was obliged to carry him to the latrine, and then I noticed his dhotee was loosened. I noticed that he was suffering from double orchitis, and the parts were swollen and red, and were painful to the touch, and the glands in his right groin were slightly enlarged, but they were not very tender. He had slight fever on Saturday evening. The patient scalded his right great toe with some boiling sugar five or six days before I saw him, and this laid him up temporarily. After four days he was able to limp about, and he returned to his work. It was after this that he suffered from double orchitis.

On Monday, the 2nd instant, he got very much worse, and he sometimes clenched his hands. I noticed that he had small red spots on his body, and when I asked him how they had come there, he said that there were too many mosquitoes about.

At this point Babu Nolin Behari Sircar pulled up one of his sleeves and showed us some red spots (mosquito bites) that were on his arm, and on being asked if the spots resembled those on the deceased's body, Bihari Lal Das said that they were exactly the same.

The mosquito bites on Babu Nolin Behari Sircar's arm did not disappear upon pressure.

He continued:—I attended to the patient from Saturday.

On Monday he became delirious, but before he got into that state he expressed a strong desire to return to his native village.

I noticed that there was a plaster on the enlarged glands; it was there when I first saw the patient, but I do not know where he got it from.

I went on Sunday and Monday to see him, and stayed with him all Monday night.

On Tuesday I remained with him till 11 a.m., and returned again at 5 p.m.

I was present when the doctors came on Monday night, but I did not inform them about the double orchitis. I did not notice any yellow stains on his dhotee, and I am not aware that he had venereal disease. All the occupants of the house and the coolies employed by the sugar refiner knew of his condition, but none of them informed the doctors of the truth, and they must have lied to the sahibs.

Babu Nolin Bihari Sircar states orchitis is not uncommon, but never produces fatal results.

H. J. DYSON,
Sanitary Commissioner for Bengal.
C. G. ROBSON-SCOTT.

CALCUTTA, November 7, 1896.

CASE NO. IX.—CASE AT WOOLTADANGA.

No. B—108, dated Calcutta, November 6, 1896.

From W. J. SIMPSON Esq., M.D., Health Officer to the Corporation of Calcutta to the PRESIDENT OF THE MEDICAL BOARD.

I HAVE the honour to inform you that the following postcard has been received by me to-day, dated Wooltadanga, 4th November 1896.

From Babu Johur Lal Dutt to Dr. Simpson.

There occurred a case of bubonic plague in Wooltadanga Saltpetre Factory. The man died yesterday at No. 42-24, Wooltadanga Road. You ought to see it is plague or not.

I have sent a medical inspector to make inquiries and hasten to give you the information, in order that the medical members of the Board may make inquiries if they desire to do so.

Dated Calcutta, November 7, 1896.

From W. J. Simpson, Esq., m.d., Health Officer to the Corporation of Calcutta to the President of the Medical Board.

In continuation of my letter,* dated yesterday's date, I have the honour to forward herewith a copy of the Medical Inspector's report on the Wooltadanga case.

Health Officer—

With reference to the alleged case of bubonic plague reported to you by one Johur Laul Dutta, I beg to state that I had been to the saltpetre factory at 45-25, Wooltadanga Road this morning.

It is on the other side of the canal, and is outside our jurisdiction. The deceased's name Goorbuksh Laul Hinon, male, about 60 years old, had been laid up for 13 days. At first he had been suffering from obstinate constipation and pain in the abdomen.

Then he had persistent hiccough for five days. Subsequently he became speechless three days before his death on the 3rd November. There was no enlargement of any of the glands, nor any other suspicious symptoms. These are all the facts I could gather.

November 7, 1896. P. C. Mittra, Medical Inspector.

Intestinal Obstruction.—H. D.

No. 114B., dated Calcutta, November 16, 1896.

From W. J. Simpson, Esq., m.d., m.r.c.p., Health Officer to the Corporation of Calcutta to the Secretary to the Board of Health.

With reference to your letter No. 11, dated the 12th November 1896, I have the honour to refer you to the Medical Inspector's report, which was forwarded to the Board on the 7th instant, and which states that from inquiries he did not think that the man who died at 42, Wooltadanga Road was a case of plague, and secondly, it was beyond the limits of the Municipality of Calcutta. For these reasons the matter was simply reported to the Board, and no action taken.

Case No. X.—Case in Armenian Street.

No. 113b., dated Calcutta, November 10, 1896.

From W. J. Simpson, Esq., m.d., Health Officer, Calcutta Municipal Corporation, to the President, Medical Board.

I have the honour to submit the following report on a case of pestis ambulans and on an unusual mortality among rats:—

Case of Giga, aged four years, son of Hardat Roy, of 13, Armenian Street.

Dr. Charles wrote to me on October 30th to the effect that he had just seen in consultation with Dr. Bilimoria a case which he thought ought to be examined. The details given by Dr. Charles are as follows :—" Child Giga, aged four years, son of Hardat

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* I do not remember this.—H. H. R.

Roy, of 13, Armenian Street, ill about 10 days, fever and slight bronchial catarrh, glands of left axilla enlarged to size of small marbles; those of right axilla enlarged, but less so; glands of right groin palpable; one gland in left groin inflamed, and will suppurate; sub-occipital glands can be felt, but do not count, as the child has had eczema of auricles. The definite clinical signs of a typical case of plague not there, but I consider it certainly as good a case as I can imagine for the examination of the blood.

"*Present condition.*—Fever continuous with exacerbations, bronchial catarrh, glandular enlargements, tenderness on pressure over liver, a vesicular and papular rash has been out; not seen, to-day."

On October 31st I visited the house in company with Dr. Bilimoria, and found the patient in the same state as noted above. His temperature on the 30th October was 101·8 in the morning and 100 in the evening. On 31st October temperature 99·4, pulse 120, tongue furred in the centre, tip and edges red, bowels inclined to be constipated.

On November 1st the patient was seen by Dr. Cobb, Dr. Bilimoria, Dr. Chatterjee and myself.

The gland in the groin was opened and found to contain pus. Specimens of blood and pus were taken.

The blood on examination was seen to contain diplo-bacteria.

On inquiry into the circumstances of the case we found that the people in the house were Marwaries, who had communications with Bombay and received goods (clothing and yarns) from that city.

After having completed our examination of the patient we went down stairs to inspect the godowns where the bales from England and Bombay were stored. While inspecting these we noticed a large grey rat sitting on a step looking very ill, it had a staring coat, watery eyes, and did not attempt to move though surrounded by people. The rat was caught and taken to the laboratory, where it was killed and immediately examined.

Post-mortem Examination of the Rat.

On deflecting the skin from the abdomen and groins, two enlarged glands, the size of small beans, were found in the right groin. In the left groin two glands were found very much congested and agglutinated together.

In the left axilla was one enlarged gland, the size of an almond.

Lungs were a pale greyish colour, with dark mottled patches. Spleen was congested and enlarged. Abdominal glands were enlarged. Kidneys were intensely congested. Liver was enlarged and congested.

Blood was taken from the heart, liver, and spleen and examined under the microscope and found to contain diplo-bacteria. Blood from these organs was also put into nutrient media, with the result that pure cultures of diplo-bacteria were grown, closely resembling those found in the plague patients.

As a control experiment the blood, liver pulp and spleen pulp of seven healthy rats were examined with negative results. Similarly, the blood and the spleen pulp of the healthy rats were put into nutrient media, and no growth of diplo-bacteria was found.

In connection with this observation, I think it important to inform the Board that within the last few days an unusual sickness among rats in Jorabagan has been observed. Whilst the special establishment recently granted by the Municipal Commissioners for cleansing the premises of houses was working at 81, Burtolla Street, the inspector of the gang noticed an unusual number of dead and sick rats. He reported the circumstance to Dr. Banks, who ascertaining the correctness of the statement on personal inspection reported the matter to me.

I visited the house with Dr. Cobb on the 9th November; we saw eight dead and two sick rats; 81 Burtolla Street is a grain depôt, and is in a very dilapidated and insanitary state, so much so that I have recommended it to be closed as unfit for human habitation.

The grain is bought from the Howrah Railway godowns, and some of it is stated to have come from Bombay.

We next visited a neighbouring grain shop, 14, Burtolla Street. The owner at first stated that he had noticed an unusual mortality among rats, but he afterwards denied it.

Mr. Scott, one of the Inspectors of the special establishment in this locality, has lately observed [illegible] number of sick rats in the streets with their hair partly or wholly fallen off. They creep about and are stoned by boys and sweepers, who make it a form of amusement. The two sick rats caught at 81, Burtolla Street, were taken to the laboratory. One of them died shortly afterwards, and was not examined. No. 2 died at 3.30 p.m., and was examined at 4.15 p.m. The liver was found enlarged and congested, and spleen very dark in colour. Specimens of the spleen and liver showed diplo-bacteria in large numbers.

Later in the day (9th November) seven more sick rats were caught and sent to the laboratory. Of these, I forwarded two to Dr. Cunningham. One of the remaining five was killed and examined. The axillary glands on right side were much enlarged. The liver was enlarged. Specimens of blood, spleen pulp, and liver pulp contained diplo-bacteria. The heart blood was put into culture media.

In consequence of the Board having recorded their opinion that the former cases of glandular swellings with fever reported by me were not cases of true bubonic plague, I hesitated to report the case Giga at 13, Armenian Street, though owing to my investigations at the laboratory I satisfied myself they were cases of bubonic plague.

The occurrence, however, of a case of pestis ambulans at 13, Armenian Street, and the discovery at the same time and in the same house of a diseased rat containing diplo-bacteria in its blood and organs, combined with the subsequent unusual sickness and mortality among rats in parts of the town, have induced me to lay these facts before the Board. I consider these facts are of serious import as showing that the micro-organism of plague is gradually gaining a foothold in the city of Calcutta.

CASE NO. XI.—CASE IN FORT WILLIAM.

Extract from a letter from Dr. R. COBB to His Honour the LIEUTENANT GOVERNOR OF BENGAL, dated 16th October 1896.

"Last July, Surgeon-Major S——r, who had seen a large number of these cases (plague) while on leave at Simla, was attacked by peculiar shiverings which he noticed were quite different from ague and were not followed by fever, but were followed by glandular swellings in the groin, axilla, elbow and neck. Although better, he is still suffering from the effects of the attack. Our examination of his blood showed the same bacillus."

CASE NO. XII.—CASE IN WARRIS BAGAN LANE.

Dated Calcutta, 12th November 1896.

From W. J. SIMPSON, Esq., M.D., Health Officer of the Corporation of Calcutta, to the SECRETARY, BOARD OF HEALTH.

I HAVE the honour to forward you a copy of a letter just received (6.30 p.m.) from the Officiating Commissioner of Police.

Dated Calcutta, November 12th 1896.

From H. PAGETT, ESQ., Officiating Commissioner of Police, to the HEALTH OFFICER of the CORPORATION OF CALCUTTA.

I HAVE the honour to inform you that one John Marcellies, of No. 13, Warris Bagan Lane, cook's mate, died on the way to hospital this day.

He had fever last night and swelling in the groin. His body has been removed to the morgue in the Medical College Hospital.

No. 14, dated Calcutta, November 14th 1896.

From Surgeon-Captain C. G. ROBSON-SCOTT, Secretary Medical Board, to the POLICE SURGEON, Sealdah, Calcutta.

I AM directed by the Medical Board to request the favour of your submitting a full report upon the *post-mortem* examination on John Marcellies, a cook's mate, of No. 13, Warris Bagan Lane, who died on the 12th instant from suspected plague, and whose body was sent to the Medical College morgue yesterday.

No. 258, dated Calcutta, November 16th 1896.

From Surgeon Major J. B. GIBBONS, Police Surgeon, Calcutta, to the SECRETARY to the MEDICAL BOARD, Calcutta.

IN compliance with your No. 14 of the 14th instant, I have the honour to forward a report on the *post-mortem* examination of the body of John Marcellies, together with a copy of the "particulars of cause of death as far as known," sent to me by the Superintendent, 2nd Calcutta Division, with the request to examine the body and furnish a certificate of the cause of death for the information and orders of the Commissioner of Police.

As the request reached me late in the afternoon of the 12th instant, I determined to make the *post-mortem* next morning. In the evening about 9 p.m. Dr. Cobb, accompanied by Dr. Simpson, Health Officer, came to my house to ask permission to take blood from the heart, and from them I learned that the case was suspected to be one of plague. As they were anxious to take the blood at once, and the case was apparently of no particular medico-legal importance, I gave the permission, and they went on to the morgue.

I held the *post-mortem* examination at 7.30 a.m. on the 13th instant, in the presence of Drs. Bomford and Bird. Cover glass preparations were made by Dr. Bird from the enlarged saphena glands and from blood taken from the saphena vein in the middle of the leg.

Particulars of Cause of Death as far as known.

The deceased, aged about 16 years, lived at No. 13, Warris Bagan Lane. He was employed as cook's mate at the Great Eastern Hotel, and did not go to work yesterday, the 11th instant. At 7 a.m. yesterday he stated to "Punna Lall Mug," his companion, who shared the same room as himself, that he had very strong fever and had swelling in his groin. Punna Lall Mug also states that his swelling on the groin was lanced about a year ago; the deceased's sister, Miss Jane Marcellies, and Pobi Bewah also speak to this fact.

He is a pauper, and was removed to the Medical College Hospital in a palki, and was accompanied by Edwin Pereira, of 13, Warris Bagan, and on the palki landing at the hospital he was found dead.

E. ROBERTSON,
Superintendent, 2nd Division.

Dated 12th day of November 1896.
2¾ p.m.

ON the 13th November at 7.30 a.m. I examined the body of a native male, aged about 17 years, identified by Corporal Abdul Latif to be that of John Marcellies, *alias* Tootoo.

Body well nourished; *rigor-mortis* present in the legs only. Signs of decomposition; green discolouration of abdomen, superficial veins of a red colour, odour of putrefaction.

Three small, thin, old scars in the left femoral region. Left saphena glands enlarged. The largest a circular disc about the size of a rupee and ¼-inch thick; gland substance pale red in colour.

Lungs—old fibrous adhesions to the chest walls; substance congested. Bronchi filled with muco-purulent fluid and congested.

Heart—right side full of blood; end-cardeum stained by hæmoglobin; left side empty; muscle substances paler than usual; no valvular disease.

Liver—congested and greasy looking on section.

Spleen—soft and congested.

Kidneys—congested.

Stomach—healthy; contents about four ounces of watery fluid.

Intestines—healthy; contained bilious fœces.

Brain—vessels of meninges full; brain substance healthy.

No marks of violence.

From the history of the case and the *post-mortem* appearances, I am of opinion deceased died of fever and bronchitis.

J. B. GIBBONS.

OTHER CASES IN FORT WILLIAM.

Demi-Official from Surgeon Lieutenant Colonel R. COBB, M.D., to His Honour the LIEUTENANT GOVERNOR OF BENGAL.

I WRITE to you on a most important and urgent matter which has come to my knowledge recently.

You remember the case of plague which occurred at Howrah on October 8th in a boy who arrived from Bombay. He suffered from glandular enlargements and a little fever but was able to walk about.

Dr. Simpson and I examined him and took specimens of his blood, and submitted them to microscopical and bacteriological examination. We found bacilli in them identical with the plague bacilli.

When our certificate was published it attracted the attention of Surgeon Major S——r, of the Station Hospital, who wrote on October 10th, and gave me a history of the soldiers in Fort William suffering from buboes which he had long decided were not syphilitic, and he asked me to see a few of the cases with him.

On the 11th of October I visited the Station Hospital and found these men to be suffering from a similar affection to that of the Howrah patient. On the same day I took specimens of the blood, and Dr. Simpson and I examined them together and saw they (*i.e.*, the bacilli) were similar in every respect to those found in the blood of the Howrah case.

In the meantime the Howrah bacillus had been cultivated and compared with the Bombay bacillus, and they, too, were found to be identical. After this Dr. Simpson and I, with the consent of Surgeon Lieutenant Colonel M——y, and Surgeon Major S——r, visited the Station Hospital on the 13th October, and examined ten of the patients very carefully, and found they were suffering from glandular enlargement of the groin, and many of them much pulled down from the effects of the disease. We took blood from the arms of two and transferred it immediately into culture media.

In three days characteristic growths appeared in some of the cultures, and a microscopical examination showed them to be the same bacilli as we had found in the Howrah and Bombay specimens. The next important point is that the Shropshire Regiment came from Hong Kong, and you will remember the men were employed in cleaning out the plague-infected houses, and for that work they received a testimonial, which they call the "Plague Cup." About this time, I am informed, two soldiers died of the plague, and whilst at Hong Kong other soldiers began to be affected with glandular swellings in the groin, and fever.

They came to Calcutta in January 1895, and ever since their arrival some of the soldiers have been laid up with this peculiar illness and glandular enlargements, new drafts of men being affected who have never been in Hong-Kong.

It was at first thought to be syphilis, and then careful consideration of the symptoms excluded this, and it was found that people who were above suspicion of syphilis got the disease.

Then it was considered to be of malarial origin, but malaria is not a disease which is of any particular prevalence in the fort, and glandular swellings of this nature have never before been noticed in other regiments who have occupied the fort previous to the arrival of the Shropshire Regiment, and, moreover, glandular enlagements are not a symptom of malarial poisoning.

Last July, Surgeon-Major S——r, who had seen a large number of these cases while on leave at Simla, was attacked by peculiar shiverings, which he noticed were quite different from ague and were not followed by fever, but were followed by glandular swellings in the groin, axilla, elbow and neck; although better, he is still suffering from the effects of the attack; our examination of his blood showed the same bacillus.

A number of the men suffering from this disease have been, and are being, sent up to Jallapahar for the benefit of their health.

P.S.—Probably the mildness of the cases in the Shropshire Regiment is due to the fact that they have a bacillus of a declining epidemic, and also because they are surrounded by the best hygienic conditions, but this does not prove that they might not become very dangerous under other circumstances.

R. C.

Dr. Cunningham subsequently repeatedly examined the blood of these cases and failed to find any typical bacteria.

With reference to these cases of non-venereal bubo, the accompanying article from the "British Medical Journal," by Charles C. Godding, furnishes interesting reading.

Surgeon-Lieutenant-Colonel May's note shows that non-venereal bubo existed among the troops in Calcutta in 1890, though the Shropshire Regiment did not arrive till 1895.

On Non-venereal Bubo, by CHARLES C. GODDING, M.R.C.S., Fleet Surgeon, H.M.S. "Centurion," Chefoo.

(Communicated by the Director General of the Medical Department, R.N.)

NON-VENEREAL bubo, commonly spoken of as climatic or sympathetic bubo, might be called lymphoma or adenoma. The disease is characterised by fever, enlargement of inguinal glands in one groin (seldom in both), increasing malaise, and anæmia. The inguinal glands are invariably attacked; lymphatic vessels, or glands in other situations, never, marking the difference from lymphadenoma.

Etiology.—For many years I have been in the habit of associating these cases entirely with foreign service, and of calling them "climatic bubo"; but on looking up the "Health of the Navy" for the seven years 1888 to 1894 inclusive, I was greatly surprised at the total number of these cases, and also to find how many occurred in the Home and Irregular Forces. (*See* statistics.) This would be accounted for to a certain extent in the Home Force by cases occurring in men recently returned from abroad, and in the Irregular Force by its employment on almost constant foreign service.

I consider the disease to be primarily constitutional, as indicated by the fever, and the bubo as purely a local symptom, but how this constitutional condition is produced, or why the inguinal glands alone are invariably attacked, is difficult to ascertain; and though the large number of cases occurring in the Home and Irregular Forces militate against the name "climatic," yet climatic influences appear undoubtedly to play a considerable part in the causation of this disease. For instance, the East Indian Station gives nearly four times as many cases per thousand as the Mediterranean, and the China Station, where lymphoid diseases are common among the natives, comes next in order in the production of these cases, with three times as many as the Mediterranean. On the other hand, the Mediterranean, Australian, and West Coast of Africa give comparatively few cases, and are therefore climates non-provocative of this disease. I have myself seen the worst cases on the East Indian Station, at Zanzibar and adjacent coasts, the patients having huge masses of glands in the groin, often suppurating, progressive anæmia and debility.

The immediate cause of the bubo appears to be sometimes a slight sprain; at others superficial abrasion on penis or toes; while in some no apparent cause at all can be discovered; but in all these cases the presumed cause (or what the patient judges to be the cause) is quite insufficient to account for the long train of symptoms which follow, and are trivial accidents which would have been quickly recovered from had not the patient been constitutionally ready for the excitation of this disease. Of eleven cases I have recently treated, four gave a history of slight sprain, in four no cause at all could be discovered, two had small superficial sores on penis, and one man a small abrasion on toe. In four of these cases the glands suppurated. Age has apparently no influence. Five cases occurred between the ages of 19 and 25; two between 25 and 35; and three in men over 35.

Statistics.—In the seven years from 1888 to 1894 inclusive, the average strength of the Royal Navy being 56,180 per annum, 733 cases of bubo was the yearly average. During the whole period twenty men have been invalided from the service, and nine have died, principally from exhausting suppuration from these buboes; in one fatal case femoral was ligatured.

The number of these cases varies considerably from year to year, but these figures show that the disease is a formidable one.

The worst stations are: (1) East Indies, 31 cases per 1,000 of strength; China, 25; and West Indies, 22. Stations least affected are, (1) Mediterranean, 8 cases per 1,000 of strength; Australia, 9; and West Coast of Africa, 13. The Home and Channel, with an average force of 27,000 men, gives 287 cases annually, or about 10½ per 1,000.

Symptoms.—In nearly all cases the patient's first and only complaint is simply the pain and swelling in the groin; he feels quite well in himself, but "the lump is getting larger." There may be a history of sprain or trivial injury, but almost as often there is no apparent cause. There is, however, a rise of temperature in nearly every case.

Course and Duration.—The ordinary disease runs a fairly regular course of increasing fever and enlargement of glands, lasting two to four weeks, the resulting bubo being a large conglomerate swelling. Secondly, a decline of fever and resolution of glands, lasting about a similar period, and the whole covering a period of three to eight or nine weeks; severe cases, of course, lasting much longer. The eleven cases before referred to give an average of forty-four days' sickness; the shortest twenty-six, and the longest seventy-six days. I consider a cure effected in four weeks as very satisfactory. Frequently towards the end of the inflammatory stage, from fifteenth to twentieth day of sickness, the bubo becomes very boggy, and fluctuation is simulated very completely. I have never explored them to see if pus had formed. The buboes also vary from day to day, increasing or decreasing with exacerbations and decline of temperature.

Cases of Inflammation of Lymph Glands taken from the records in the Station Hospital, Calcutta.

Dated October 22, 1896.

From Surgeon-Lieutenant-Colonel W. ALLAN MAY, A.M.S., Medical Officer in charge, Station Hospital, Calcutta, to the PRINCIPAL MEDICAL OFFICER, T. D., Calcutta.

I HAVE the honour to forward accompanying record of cases of inflammation of lymph glands, with a few short remarks which may be of use at the meeting of the Sanitary Board this morning.

RECORD of Cases of Inflammation of Lymph Glands occurring in the Calcutta Station Hospital from 1890 to 21st October 1896.

—— 1	1890. 2.	1891. 3.	1892. 4.	1893. 5.	1894. 6.	1895. 7.	21st October, 1896. 8.
Inflammation of lymph glands, cervical	3	2	3	1	1	2	4
" " axillary	1	—	—	—	—	1	1
" " inguinal	27	39	26	38	19	39	41
" " femoral	—	—	—	—	—	—	1
" " buccal	1	—	—	—	—	—	—
Total - - -	32	41	29	39	20	42	47
Total admissions for all diseases -	2,207	1,765	1,418	1,242	1,212	1,717	1,254

I.—1st Shropshire Light Infantry arrived from Hong Kong, 8th January 1895 bringing two men suffering from inflammation of lymph glands, and during the year 1895, 36 more cases occurred in this regiment, of which number 14 were in men who had not served in Hong Kong.

II.—In 1896 to date (21st October 1896), 47 cases have occurred. Of these, 41 can only be traced (the other six having left the station). Of these 41 cases, 23 occurred in men who had never been in Hong Kong. Of the remaining 18 cases, none of them had suffered previously at Hong Kong from inflammation of lymph glands.

III.—Of the 47 cases, four attacked men of other corps.

IV.—No deaths have occurred from the disease.

V.—In 1891 there were 41 cases. These occurred amongst the 1st East Kent Regiment and 21st So. Div., Royal Artillery, neither having been in Hong Kong.

VI.—Of the 47 cases occurring in 1896 (to 21st October), in three there was the exciting cause of sore feet, and in three others a possible venereal taint.

W. ALLAN MAY, A.M.S., Surg.-Lieut.-Colonel,
In Charge, Station Hospital, Calcutta.

Enclosure No. 12.

SANITARY INSPECTION REPORT ON THE CALCUTTA MUNICIPALITY.

To the SANITARY COMMISSIONER for BENGAL, dated Calcutta, October 28, 1896.

Sir,

HAVING completed a sanitary survey of Calcutta, we have the honour to forward our report under the following heads :—

(I) OVERCROWDING OF HOUSES AND BUSTEES.—The following table shows the area and population of the wards :—

Name of Ward. 1.	Area in Acres. 2.	Population. 3.	Population per Square Mile. 4.
Ward I - - -	409	36,885	56,960
„ II - - -	217	26,614	78,080
„ III - - -	403	36,431	57,600
„ IV - - -	320	34,828	69,760
„ V - - -	243	39,180	103,040
„ VI - - -	262	41,657	101,120
„ VII - - -	217	20,646	60,800
„ VIII - - -	224	50,781	144,640
„ IX - - -	460	49,472	68,480
„ X - - -	147	22,668	98,560
„ XI - - -	166	20,768	81,000
„ XII - - -	211	6,083	17,920
„ XIII - - -	192	28,366	94,080
„ XIV - - -	198	29,207	94,080
„ XV - - -	179	13,218	46,720
„ XVI - - -	153	4,620	19,200
„ XVII - - -	128	4,598	22,400
„ XVIII - - -	108	4,820	28,160

The city of London, within the Registrar General's tables of mortality, has an area of 74,672 acres and a population of 4,211,743, or 35,905 to the square mile. These figures give the highest estimate of population per square mile obtainable for London within various boundaries.

As far as we have observed, there is very considerable overcrowding in every one of these wards. In Colootollah, Ward VIII and others, the overcrowding is positively dangerous to public health. We were informed by the Inspector that there were, for instance, 250 people in one house, in which we consider the accommodation was not certainly enough for more than 50 people. For more definite examples, we submit the following as noted :—

In Ward I in Russick Lal Ghose's-lane, in a room measuring 7–6 × 10–6 × 10 with no windows, tiled roof coming down on to mud walls, there were five people accommodated, besides room for cooking fires and belongings, giving each man about 157 cubic feet. In Ward V, No. 81, Grey-street, in a room 11 × 8 × 7 as before, five people were accommodated, giving 123 cubic feet per man. In Ward V, in a room 13 × 8 × 9 feet, full of rags and clothes, with cooking accommodation, there were seven people, giving 133 cubic feet per man. In Jeliatolla bustee in a house 7 × 7 × 6, *i.e.*, with 294 cubic feet, no window, and cooking done in the same room, we found six male occupants, giving 49 cubic feet per man. In Madhab Babu's Bazar, we have another house 7 × 7 × 9, occupied by four men, allowing 110 cubic feet per man, and another 7 × 7 × 7, or 343 cubic feet, occupied by five people, giving 69 cubic feet per man; cooking also done in these rooms. We need hardly quote more than this, and would point out that in barracks the minimum allowance per person is 600 cubic feet, and the premises are ventilated freely and kept clean. Here we find an allowance per man going as low as practically $\frac{1}{13}$th of that given in barracks, and no ventilation, with filth *ad lib.* both in the room and its surroundings, to say nothing of the filthy persons of its occupants, the sewage round in the adjacent drains, and the accumulated filth in the neighbouring latrines, and to this may be added the fact that the subsoil on which the huts are built is soaked through and through with sewage matters and littered with garbage and filth of all kinds. In Marwaritolla the houses are separated from each other by narrow gullies, so cramped that coolies cannot possibly get down there to clean them out, and when we further state that the majority of these gullies are a foot deep in absolute sewage filth, and that they are freely used as latrines and urinated in, we only wonder that with such overcrowding, combined with sewage air pollution, the public health is reported to be so good as it is.

In No. 17, Durpo Narayan Tagore's-street, the houses are built almost back to back. It would nearly be impossible to squeeze between them; sunlight is so far shut out that, with broad daylight outside the gully, it is absolutely impossible to do more than grope your way from one part to another within these tenements; rats run about here in the dark as they would at night; a heavy sickening odour pervades the whole place; walls and floors alike are damp with contamination from liquid sewage, which lies rotting, and for which there is no escape. From the gully between Nos. 21 and 22, Maharatta-street, 10 cartloads of offensive matters were removed; this gully was so narrow that it was impossible to walk straight down it, the coolies having very great difficulty in using their kodalies (pickaxes). Jammed in among these overcrowded huts are clusters of filthy, dilapidated privies, which are fouled beyond description, with their drainage discharging into the little space that is left, and polluting everything. In many cases it is practically impossible to walk into the spaces between and behind the huts, where the ground is damp with liquid sewage, and the stench is simply overpowering. If any further argument is required, we would refer to Table I, which shows that with all this the population reaches as high as 144,640 per square mile. Other native cities have been reported on as being bad enough, but the metropolis, which should serve as a model, is obviously at least five times as overcrowded as the most overcrowded municipality in Bengal, Bihar, and Orissa —*vide* Sanitary Commissioner's Report, 1895–96.

The only remedy which will be of any use at all is :—

(*a*) The cutting of wide roads through these overcrowded areas;

(*b*) The limiting of gullies to a minimum width of 12 feet at least;

(*c*) Inasmuch as from the very character of the present buildings, which in the case of bustees are constructed of filth-retaining materials, it is absolutely impossible to clean or to keep them clean. It is our opinion that no real sanitary improvement can be effected so long as these tenements be allowed to remain. There is nothing left, therefore, but to recommend the absolute demolition of these filthy huts, and their replacement by decent model workmen's houses, as may be seen in Bombay.

In Marwaritolla, which is perhaps the most thickly populated portion of the municipality, and where the conditions of filth associated with overcrowding reach their climax, we are of opinion that no measures short of the compulsory widening of all the roads and lanes will be of any real benefit.

Public Latrines.—To begin with, these are hopelessly deficient in number. As a consequence, we find in every bustee large numbers of the most inconceivably dilapidated and foul-smelling semi-public latrines for the use of the inhabitants. The majority of these are very rarely cleansed, and as a consequence there is a continuous sewage overflow and soakage into the ground. We, therefore, think that the municipality should take the matter into their own hands and erect model public latrines in all these places, and by so doing a large number of disease-breeding centres would be done away with.

Of the public latrines that exist, none are really built on sound sanitary principles, to add to which certain of them, as, for instance, one in No. 93, Upper Circular-road, are in a hopelessly dilapidated condition; the masonry of the floors and seats broken up, and the ground on which they stand freely absorbing every possible degree of filth. The condition of these latrines, for the hours during which the water supply is turned off, is something too horrible for description. The large gully pit into which the night-soil is supposed to fall is choked and filled up with enormous masses of solid excreta.

Efficient arrangements for continuous flushing are absolutely necessary. As things are when the water is turned off, the stench is so horrible that it is quite enough to deter the public from visiting them, and one can perfectly understand how people should prefer to commit nuisance anywhere rather than visit such places.

Private Latrines.—The simplest method of explaining the existing conditions of the private latrines will be to describe the type of privy which is usually met with. As a rule the seat with the seat aperture is from 2½ to 3½ feet above the ground. Immediately below this is the gumla (earthen-pot) chamber which receives the night soil; sometimes this chamber opens directly on to the roadside; in other cases into a second chamber placed to one side, and sometimes into a long, narrow, tunnel-like gully, which is the only approach to it. The latrine itself is usually built of brick, the seat is coated with cement; but in the underlying chambers the brick-work is not faced with plaster, and the floors in a large number of instances are kutcha. The drop from the seat to the gumlas we have found to vary from 18 inches to 25 feet; so that the night-soil must necessarily be splashed all over the walls and floors. In many instances the gumlas are embedded in the floor and cannot be removed for cleaning; in many other cases there are no gumlas at all, or the vessels provided are so small that before long, in the course of any one day, the night soil overflows the gumlas, and spreads out in a filthy pool covering the floor. From what we have seen, we do not believe that the latrines are cleaned every day in all parts, and in some that we observed, as, for instance, in Nos. 46 and 228, Mundal-street, the gumlas, the capacity of which must have been at least 10 gallons, had overflowed, and stood in a pool of filth which reached half-way up its sides. The same thing was observed in No. 162, Ahiritolla-street, and in No. 6, Rajah's-lane. With regard to the cleaning of these places, we would point out that the doorways which open into the gumla chambers, or the passages leading to them, are so small that a man can only just squeeze through (in one case we measured the opening to be 1 foot 3 inches × 2 feet 6 inches); where there is a passage from which the side chamber opens, the difficulties of cleaning are greatly increased owing to the cramped space and darkness in which the sweeper has to work. Where the gumla chambers open on to the street, the openings are so small that the vessels cannot be removed without spilling practically the whole of their contents on to the ground, and the result is that they never are removed and properly cleaned, but the contents are partially removed by an earthenware dipper, aided by the hands of the sweeper; even with this method a varying quantity of night-soil is left in the gumla or spilt on the floor. As a result of these facts, it is no wonder that the latrines are always foul smelling, and one cannot blame the sweeping staff, as the construction of these places is absolutely wrong. When we add to this the fact that it is latrines like these that are found in clusters in the most densely overcrowded bustees, and that in the majority of cases there is either no drainage or the liquid discharges pass into the surface drains, we have a picture of insanitary conditions in an overcrowded bustee which would be hard to beat. The inspection of these privies throughout the city reveals a hopeless sameness of sanitary defects. We would recommend that all private privies be remodelled on a standard plan, which would admit of—

(*a*) Adequate ventilation of the gumla chamber.

(*b*) Sufficient space and light to give the sweeper a reasonable chance of cleaning the place.

(*c*) The replacement of unglazed gumlas by deep iron tarred receptacles.

Further, the sweeper staff maintained is numerically deficient. The table attached speaks for itself. As far as we can gather from the figures supplied by the Health Office, there is an average of 39 privies per mehter, but we are credibly informed by the inspecting staff that the average number of privies per mehter is about 40 or 50. Allowing eight working hours per diem, which no sweeper ever puts in, we have an average of about 12 minutes per man per latrine (*i.e.* at 40 privies per sweeper). This time allowance includes the time occupied not only in cleaning privies, but in carrying night-soil to all places to which it is carried, and also that occupied in attendance on public latrines and night-soil depôts. Practically, therefore, each sweeper can scarcely have more than five minutes per latrine. Certainly he has not that in actual practice. Seeing that so many privies are in a tumble-down condition, or in more or less disrepair, and that out of the scores inspected, not a single one was in anything approaching to a clean condition, it is quite apparent that whatever the cause, the staff do not overtake the work allotted to them.

House-connections and house-drains.—In the course of our inspection we found that the condition of the house-drains and "down-pipes," which were intended to convey latrine and house sullage water, were in a deplorable condition. In a large number of cases the down-pipe was broken at from five to 15 feet from the ground, and the water, urine and liquid sewage from the houses were simply splashing on the ground, fouling the whole gully or lane, and soaking the walls of the houses, which in many cases were most thickly coated with filth. As examples, we might mention No. 39—3, Burtollah-street, and No. 169, Maniktollah-street. The house drains and gully traps were in a large number of instances in very bad repair and choked, and thus their contents (made up of washing from privies, urine, and kitchen refuse) overflowed, and the state of the adjacent lanes is simply filthy. As instances of this condition of things, we would mention No. 11, Holloodhur Burdan-lane, No. 43, Ooriyapara-lane, 70, Baniatollah-street, 50, Bolorampore Mozamdar-street. In No. 33, Muktaram Babu's-street, occupied by Rai Amitra Nath Mitra Bahadur, the house-drain was directly connected with the public sewer; the kitchen drain was also directly connected with the sewer, which was untrapped and foul.

We would therefore recommend that more stringent regulations be brought in, forbidding the direct connection of house-pipes with sewers, and insisting on house-drains being kept in thorough repair.

(III.) SURFACE DRAINS.—A large number of these in bustees and back streets are constructed of Raniganj half-pipes, laid on a bed of khoa (concrete). The majority of such drains show the joints open and more or less disconnected, the pipes broken, the bed of the drains sunken, and the drains more or less in disrepair. Owing to the alteration in level, they do not conduct as they ought to, often draining away from the gully pits to which they are intended to lead. In many instances the surface drains, constructed of brick faced with cement or mortar, are wholly in disrepair. In a large number of instances the drains are hopelessly blocked with sullage matter, and are very frequently used as latrines or for the committing of nuisance. As examples of premises with bad surface drains we would quote the following:—73, Grey-street, 156, Upper Circular-road, belonging to Maharaj Mahendra Krishta Dey Bahadur, 16, Gobin Banerji's-lane (zamindar Kali Baral), 13, Rajendra Nath's-lane (owner Atal Kumar Sen). Many other instances can be quoted. In places as in 66, Sukea-street, there are clusters of privies draining directly into surface drains, the gully pits being a long way removed.

In the bustees in Jorabagan, Russick Lall Ghose's-lane, Sukea-street, Gumgarpara, Chandney Chowk, we have noted that the surface drains in many cases run down gullies, which are mostly only two or three feet wide. These drains are choked, and nests of the most filthy latrines situated right within the courtyards of houses discharge into them. In Chandney Chowk we found open urinals actually built over the surface drains, and these urinals were being used as latrines. It would be quite wearisome to multiply examples sufficiently to illustrate any considerable proportion of what we have actually observed, and it does not appear to us that any municipal bye-law touching these conditions is ever enforced—if, indeed, such a bye-law exists.

(IV). CONDITION AND CLEANSING OF ROADS.—This is entirely unsatisfactory for the following reasons:—

(1.) We are credibly informed by the Sanitary Inspectors, and indeed have seen for ourselves, that there is an utter want of system in the way in which house refuse is put out at all, and at any hours. There is no municipal bye-law or ruling regulating the putting out of house-refuse. As a result, scavenging carts may take what they find, but the streets are never cleaned.

We would recommend—

That definite hours be appointed for the putting out of house rubbish, viz., from 1st April to 31st October all rubbish be put out by 6 a.m. in the morning and by 4 p.m. in the afternoon, and from 1st November to 31st March by 7 a.m. and 3 p.m.; that no rubbish be put out between the hours of 6 a.m. and 4 p.m. in the hot weather, and nothing should be put out between 7 a.m. and 3 p.m. in the cold weather. Any occupants of holdings infringing this rule should be severely punished. The scavenging staff (carts and sweepers) should be increased to meet requirements. It would be of no use recommending that rubbish be put out between certain hours, as, for instance, between, say, 7 and 9 a.m., for then, unless a cart started on its rounds at 9 a.m., it may miss anything at any point in the earlier portion of its round.

(2.) Scavenging carts do not always take up what they find put out

(3.) Scavenging staff is absolutely inadequate. In support of this statement we may quote the following figures showing work done by scavenging coolies. As examples, we would quote that—

In Ward	I.	15,109	square feet of road area per cooly	is	allotted.
,,	II.	8,606	,,	,,	,,
,,	III.	14,525	,,	,,	,,
,,	IV.	11,439	,,	,,	,,
,,	V.	8,237	,,	,,	,,
,,	VI.	11,558	,,	,,	,,

This would allow a considerable length of road for each cooly; and having regard to the traffic, the road areas per cooly are not so easy to manage as it might at first sight appear.

(4.) The surface drains along roadsides are entirely insufficiently flushed. The following table shows the number of bhistis allotted per ward. As example, we would quote that—

In Ward	No.	I.	there are	8	bhistis to	409	acres, or	1 to $51\frac{1}{8}$	acres.
,,	,,	II.	,,	9	,,	217	,,	1 to 29	,,
,,	,,	III.	,,	9	,,	403	,,	1 to $44\frac{7}{9}$	,,
,,	,,	IV.	,,	8	,,	320	,,	1 to 40	,,
,,	,,	V.	,,	11	,,	248	,,	1 to $22\frac{4}{11}$	,,
,,	,,	VI.	,,	10	,,	262	,,	1 to $26\frac{1}{5}$	,,

Having regard to the necessity for flushing which exists, especially in the dry season, the present staff of bhistis appears ridiculous.

(V.) SANITARY CONDITION OF COMPOUNDS AND COURTYARDS OF HOUSES.—Again, we have to state that throughout our inspection we found the scavenging of courtyards and compounds insufficient, and in many cases entirely neglected. We would draw special attention to the condition of courtyards and houses in Marwaritolla.

As example, we think it would be as well to describe the state of things obtaining at No. 46, Burtollah-street. The premises consist of a rectangular courtyard surrounded by dwelling-rooms on the ground-floors, and on two storeys above. The entrance to the courtyard is 3 feet wide, opening into a passage measuring 5 × 9 × 9 feet leading into the courtyard proper, and crowded with bricks and tiles; and in one corner a collection of filthy rubbish, 4 feet square. The courtyard is 32 feet long by 11 feet broad, of which 6 × 3 feet are taken up by the staircase leading to the upper storeys, and under which we found a collection of dirty rags. In this corner was also a tap and sink. In the opposite corner of the courtyard were two privies, discharging by a broken pipe, 3 feet from the ground, to an open drain crossing the width of the courtyard to the sink just mentioned. The wall under the privy pipe was thickly coated with latrine discharges, and the drain was partially blocked with filth. The walls in the neighbourhood of these privies were damp and splashed with filth up to a height of 3 feet. The pucka drain going down the length of the courtyard is not clean, and was blocked at one end by a collection of old rags and bricks, and a considerable portion of the pucka floor of the courtyard (which was strewn with kitchen refuse) was in bad disrepair. In the chamber to the left, and opening directly into the yard are the two privies, pitch dark and absolutely without ventilation. It was necessary for us to get a light to see into them, even in the middle of the day. The drop from the privy seat to the gumla chamber is 3 feet; to get at the inner gumla the sweeper has to reach over across the first one, and when we state that the entrance door to the outer chamber measures 1 × 3 by 2 × 6 inches, it is obvious that it would be quite ridiculous to expect adequate cleansing, specially when we add the fact that the gumla chamber was pitch dark inside and swarming with cockroaches. The floor of these chambers was about an inch deep in soft sewage mud. There are three living rooms on this ground floor, measuring 6 × 8 × 8; they are pitch dark and quite unventilated. On the first floor are six dwelling rooms, of which only the two front rooms are decently ventilated and lighted; a wooden stair leads to the second floor, under which we found an accumulation of rags, brooms, and filth of all kinds; the passage on the second floor is not wide enough to enable two people to walk abreast, and every corner is stuffed with rags and filth of all descriptions.

The next house, No. 45, Burtollah-street, is built exactly on the same plan. The entrance door, 4 feet 6 inches wide, opens into a passage 12 feet long, and having a shop on either side of, and communicating with, it. The central courtyard is 45 feet long, 16 feet wide, but of this, a space of 5 feet all round is taken up by a verandah and its drain. Leading off the verandah are 12 rooms, only two of which have any ventilation, except that obtained by the doorways opening on to the verandah. The courtyard floor is generally in very bad repair, but at the entrance a space of about 20 square feet is completely broken up. There are eight house-pipes opening into the courtyard drain, all of which carry house sullage water from the upper storeys. Three of these are broken, and their contents soak into the walls. There are four staircases leading to the upper dwelling-rooms, and both stairs and rooms are black with filth. We are informed by certain of the occupants that 150 people live in the premises, whereas we are of opinion that there is only one room for 40 or 50 people at the outside. There are two privy seats on the first floor, and the drop from the seat apertures to the gumlas below we found to be 15 feet. These two houses (45 and 46, Burtollah-street) are separated from each other by one of the most filthy and insanitary gullies it has ever fallen to us to see in India, and which, in the years of our experience, it has ever been our misfortune to come across in any municipality in Bengal. The entrance to this gully is a dark unsightly aperture, measuring 3 feet by 5½ feet, to which one was introduced over a foul-smelling heap of rubbish. For about 6 feet or so we found it 4 feet wide, and for the rest of its length it measured about 2 feet across, till it opened out into the gumla chamber. Its length was in all about 40 feet, but we did not dare to measure it, for its hideous condition was too much even for the strongest nerves. Along its floor ran a drain about 10 inches wide and 8 inches deep, made of brick unfaced with plaster, and its bottom laid in plates of what may have been stone or tiles, but which was broken up and so rotten with the filth of ages that its structure was not easy to pronounce upon, for its joints were all open and sewage soaking through. For about 20 feet the gully was open above, and into it poured the sullage washings from the upper storeys of both houses, 46 and 45. Eight broken-down pipes discharged their filth into it, their mouths opening some near the drain and some at perhaps 10 feet up, and one perhaps 15 feet up. The side walls were splashed as high as a man can reach, and thick and black with indescribable filth. The drain itself was in a condition which must be seen to be appreciated; full 5 inches deep in the foulest sewage direct from the pipes and the latrine beyond, and blocked by a bund of sewage mud deliberately built up at its near end, where a miscellaneous collection of night-soil vessels in various stages of filth were stored. The latrine itself was the central feature of the locality, and in a condition which would totally defy all description. Imagine a place about 6 feet square—we did not dare to measure, or indeed to approach it—with two gumlas containing about 30 gallons of night-soil semi-fluid, with the fermentation of putrefaction, and its floor strewn deeply with the same disgusting matter, and add to this the splashes of the night-soil all over the gumlas and walls up to the height of a man's waist, or nearly so, and you have a faint picture of a condition which beats all one has had the misfortune to see so far. Complete investigation, even if any one may have had the temerity to attempt it, was rendered unsafe and impossible by the fearful thick overpowering stench which emanated from the gumla chamber at the end of the gully. The air from this pervades the atmosphere in

No. 46, which is separated from it by a wall 8 or 9 feet high, its upper storeys overlooking the open gully. This gully, together with the two houses on its sides, makes up a sanitary picture of a condition not by any means uncommon in Calcutta, especially in this quarter, and of a state of things that any community may indeed be ashamed of. We need not therefore multiply harrowing descriptions, and, indeed, we have no wish to make this report more full of disgusting detail than need be necessary to convince people that the conditions which have come under our notice are, to say the least of it, perilous to the public health, while at the same time their existence shows scandalous neglect and reflects the very gravest discredit on those responsible.

STORAGE OF RAG AND GRAIN DEPÔTS.

Rag Depôts.—We inspected a rag depôt at 156 and 157, Bow Bazar. The depôt shed is a portion of the Bow Bazar Market shed, in which meat, fish, and vegetables are sold. The rag depôt is directly to the north of the meat bazar, and owing to its proximity, its being in the direct line of the cold weather prevailing winds, we consider its nearness to the food stores to be very undesirable. The rags collected here are of the filthiest description, consisting of bits of old bedding, quilts, personal apparel, &c., which are picked up in many cases (as we saw with our own eyes) from the rubbish heaps on the roadsides; these rags are sorted into classes. We think that the existence of such a place adjoining and having direct connection with a meat and fish market is certainly most undesirable, and would advise its being closed at once or removed.

Grain Stores.—Grain stores in the main are satisfactory, although we consider that better ventilation should be provided in those godowns where rice-cleaning is carried on.

STATE OF STABLES AND COWSHEDS.

The condition of the cowsheds in Calcutta is a disgrace to any civilised community. They are to be found in nearly every bustee in the municipal area, but it would best serve our purpose to note a few instances, *e.g.*, Rajah Bagan bustee cowshed; No. 60, Amherst-street bustee, and 67, Ram Kanta Bose's-street. To commence with, these places are often found in the most thickly-populated part of the bustee. The sheds in which the cows live are generally made of wattle and daub laped with cowdung, and in many instances with brick or wooden floors. The sheds are very dark and very badly ventilated, and the floors are covered as thickly as possible with cowdung and urine and stable-refuse of all sorts, which soaks into the floor and makes it impossible for the cattle to keep free from disease. Again, the drains in the sheds are, in many instances, faced with wood, which is broken and rotten. The cattle, which ought to have 650 cubic feet of air each, are so densely packed that they can just move and stand. In bustee No. 18, Fakir Chand Mitra's-street, we found that the space per cow is as low as 120 cubic feet. The drains for the sheds lead to outside pucka reservoirs, which are usually too small, as in nearly every instance we found the liquid cowdung overflowing into the yard in close proximity to the shallow wells which are to be found in connection with every cowshed. In two instances in Ram Kanto Bose's-street, No. 10 and No. 67, the liquid sewage was seen to be flowing into the well. The surface drains in proximity to the cowsheds are often filled up with liquid sewage from the sheds. In Harke Bagan, 83, Grey-street, a surface drain was brimful of sewage of the consistency of thin mortar for some 40 yards of its course, and other drains opening into this one were also full for varying distances, and the gully pit at the end quite blocked. The water in the wells in every cowshed is green with filth, and is given to the cattle for their food and their drink, and we believe that the dairy utensils are also washed in this water. In 67, Ram Kanto Ghose's-street, the milking vessels had cowdung adhering to their inner surfaces, and these dishes had only just been used for milking. In case our description may be taken as being too general, we wish clearly to state that this description applies in the main to almost every cowshed inspected. Seeing that there is an abundant supply of filtered water, these wells, we think, should be closed.

Stable.—In Chowringhee-lane there is a stable situated between No. 10 and Maharaja of Rangpur's house, and which is provided with a drain and gully pit; the drain is capable of conducting nothing, and the gully pit is covered with stable-refuse, and all the filthy washings from the stable are thrown into the roadside drain. In Kahai Lal and Ruba Lal's stables, off Armenian-street, the stablemen's sleeping quarters are directly above the horses' stalls; the stable floor is not paved, and is undrained. These are simply types of what exist. The general condition of hackney carriage stables is not far removed from that of the cowsheds.

In this connection we might call attention to the condition of some of the hackney-carriage stands; for instance, those at the corner of Wellesley-square and in Wellesley-place, where the gharri horses remain for hours on stands, which are unpaved, so that adequate cleansing is impossible. The question of what may be done with the cowsheds is a difficult one.

It is impossible under present circumstances to clean them or to keep them clean. Building model cowsheds involves very great expense, and the evil will in all probability only repeat itself in a short time. The only alternative appears to be to recommend the entire removal of cows and cowsheds outside urban areas. Milk can be readily brought in and sold as required.

Condition of the Circular Canal.—Between Bagbazar Bridge and Maniktolla Bridge we found four sewers discharging into the canal. The canal water, we understand, is largely consumed.

State of Tanks.—Generally and undeniably filthy. In the flour-mills belonging to Hem Chunder Mukerji and Benoy Krishna Banerji, the water from two fouled tanks is used for washing the wheat. Around the edges of these two tanks are cowsheds built up close to them and with the drainage passing directly into them. Buffaloes were tied on the edges, and were wallowing in the water; people were washing themselves and their clothes there, and we have no doubt that this water was also used for purposes " domestic " and other which we shall not here specify, and yet this same water was pumped up and used for " cleaning " the wheat which is ground into flour for bread for the use of the enlightened citizens of Calcutta. Seeing that there is an abundant supply of good filtered water, we cannot understand why such practices are either indulged in or permitted, and such a wholesale contamination of food-supply as here undoubtedly is deliberately perpetrated is worthy not only of the severest condemnation, but of the most deterrent punishment.

Adequacy of Water Supply.—For drinking purposes it appears to be sufficient, but no data have been supplied to us.

(X.) STRENGTH AND WORKING OF THE CONSERVANCY ESTABLISHMENT.—For strength, *vide* remarks above and table appended. Regarding working, it is our opinion that inspection is neither sufficiently frequent not sufficiently thorough; the condition of private latrines and gullies, and the testimony and complaints of people and bustees, appear to us to be sufficient evidence on this point.

(XI.) FACTS INDICATING THE NECESSITY OF A SPECIAL BUILDING ACT AND THE OPENING OUT OF NEW STREETS.—The facts which we have quoted appear to us to furnish sufficient evidence for the necessity of opening up new roads in the more crowded parts, and that altogether the conditions with regard to overcrowding should be radically altered, so as to allow of freer perflation and of ventilation and access of light. In this connection we would put forward the following as examples:—

(1) At 17-1, Chassa Dhobapara-lane one Sasi Bhusun Kundu is erecting a four-storied house in a narrow lane 12 feet wide, although this is against all regulations.

(2) In Mechua Bazar bustees need to be opened up by the construction of a road through them.

(3) In Said Bagan gully we have an example of a long narrow passage about 5 feet wide, with high houses on each side, blocking out all sunlight.

(4) The condition of bustees in Russick Lall Ghose's-lane, Sukea-street, Jorabagan-street, Marwaritolla, the condition of the gully at 17, Durpo Narayan Tagore's-

street (the last of which is intolerably dark, confined, and hopelessly devoid of ventilation), and in a more general way of most of the bustees examined, is such that no staff could possibly clean them, much less keep them clean, and that nothing short of the most radical measures possible can ever suffice to effect any real sanitary improvement.

(XII.) In addition to the above, certain matters have come to our knowledge, and for the present we would bring the following to the notice of the Board for such action as they may think necessary:—

(1) Municipal cases are tried by honorary magistrates, and the punishments awarded do not appear to be deterrent.

(2) The committing of nuisance in drains is so frequent that it appears to us that no definite or sufficient measures are taken to prevent it. In this connection we would point out that municipal officials complain that they have no police powers, and cannot arrest offenders.

(3) We are credibly informed that, owing to its present constitution, the Health Department appears to have no control over bustee and roadside drains, so that reports concerning the condition of the latter are not dealt with or taken in hand as soon as they ought to be.

(4) We notice that there is a tendency to build over land newly made by filling up tanks in the centres of crowded bustees, *e.g.*, in the vicinity of Sukea-street.

In conclusion, our acknowledgments are due to the Health Officer and his staff for the assistance rendered in the work of inspection.

We have, &c.

J. C. VAUGHAN, Surgn.-Capt., M.B., C.M. (Edin.),
Deputy Sanitary Commissioner, Western Bengal Circle.

B. H. DEARE, Surgn.-Capt., I.M.S.,
Dip. Pub. Health and Sanitary Science (Camb.),
Deputy Sanitary Commissioner, Northern Bengal Circle.

E. S. PECK, Surgn.-Lieut., I.M.S.,
Dip. Pub. Health and Sanitary Science (Camb.).

C. D. DAWES, Surgn.-Lieut., I.M.S.

P. R. HAY-JAGANNADHAM, B.A., M.B., C.M. (Edin.),
Offg. Deputy Sanitary Commissioner,
Metropolitan and Eastern Bengal Circle.

TABLE showing the Distribution of Conservancy Staff, Wards I. to XXV., Calcutta Municipality. (Supplied by the Health Officer's Department.)

WARD NUMBER. 1	Total Number of Peons. 2	Total Number of Coolies. 3	Total Number of Mehters. 4	Total Number of Domes. 5	Total Number of Bhistis. 6	Total Number of Hired Carts. 7	Wagon Platform Sarkar. 8	Trade Refuse, Hired Bullocks, or Liquid Manure Carts. 9	Gowkhana Double Carts. 10	Gowkhana Single Carts. 11	Gowkhana Dome Carts. 12	Busti Sardar. 13	Busti Tindal. 14	Cooper. 15	Road Area, exclusive of Sewer Ditches. 16	Length of Sewer Ditches, in feet. 17	Number of Privies. 18	Number of Free Latrines. 19	Number of Jamadari Latrines. 20	Number of Night-Soil Depôts. 21	Number of Urinals. 22	Night-Soil Bullocks and Carts. 23	Night-Soil Mates. 24	Number of Boys for Gully Pits. 25
1 - - -	6	103	127	3	8	11	1	5	-	21	1	1	1	-	1,556,311	22,490	4,124	3	-	3	3	-	3	4
2 - - -	6	92	100	2	9	11	-	-	2	29	1	1	1	-	791,799	9,940	2,348	4	1	-	4	1	3	3
3 - - -	7	93	125	3	9	15	-	7	-	22	1	1	1	-	1,350,884	20,153	3,998	4	2	3	4	-	3	3
4 - - -	6	97	101	3	8	14	1	5	-	14	1	1	1	1	1,109,670	19,786	3,721	1	2	1	2	-	4	3
5 - - -	7	130	123	2	11	16	-	-	11	46	1	1	1	-	1,070,888	9,232	2,545	5	4	2	9	-	5	4
6 - - -	5	92	128	2	10	12	-	3	1	27	1	1	1	-	1,063,389	28,554	3,642	3	3	1	5	-	3	4

WARD NUMBER. 1	Number of Peons. 2	Number of Sardars. 3	Number of Tindals. 4	Number of Mates 5	Number of Coolies. 6	Number of Mehters. 7	Number of Domes. 8	Number of Bhisties. 9	Number of Gully-Pit Boys. 10	Number of Coopers. 11	Number of Hired Carts. 12	Number of Liquid Manure Carts. 13	Number of Gowkhana Large Carts. 14	Number of Gowkhana Small Carts. 15	Number of Dome Carts. 16	Number of Privies. 17	Number of Night-Soil Depôts. 18	Number of Free Latrines. 19	Number of Jamadari Latrines. 20	Number of Urinals. 21	Number of Night-Soil Carts. 22	Road Area, exclusive of Sewer Ditches. 23	Length of Sewer Ditches, in feet. 24	Wagon Platform Sarkars. 25
7 - - -	6	1	1	4	121	82	3	16	9	-	13	2	6	31	1	1,135	1	1	3	12	-	1,141,883	2,918	-
8 - - -	7	1	1	3	115	123	3	14	4	-	12	-	4	27	2	2,674	4	7	1	11	-	1,159,442	12,818	-
9 - - -	9	2	1	4	146	127	4	15	5	-	21	5	2	24	-	4,120	2	1	2	3	3	1,475,372	15,896	1
10 - - -	5	1	1	3	72	67	3	7	2	-	6	-	3	16	-	1,401	3	3	3	2	-	594,758	6,124	-
11 - - -	6	1	1	2	104	76	1	6	2	-	6	2	2	14	1	2,072	1	1	-	4	-	842,838	10,964	1
12 - - -	5	1	-	1	63	9	4	9	3	-	8	-	7	18	-	257	-	-	-	5	-	932,861	-	-
13 - - -	6	-	1	3	95	59	2	11	3	-	13	2	7	20	-	1,301	2	4	1	7	-	979,675	6,360	-
14 - - -	5	1	1	3	69	75	2	10	4	-	8	2	2	14	1	2,220	2	2	3	2	-	918,504	13,438	-
15 - - -	5	-	1	2	67	39	1	6	3	-	4	-	1	11	-	1,007	1	1	-	2	-	665,847	6,686	1
16 - - -	4	-	-	1	35	5	1	4	3	-	2	-	4	14	-	289	-	-	-	1	-	883,283	-	-
17 - - -	4	-	1	1	37	13	1	4	3	-	2	1	1	8	-	305	-	-	-	1	-	835,537	-	1
18 - - -	3	-	-	1	43	25	1	4	3	-	4	1	4	2	-	327	1	2	-	1	-	448,104	-	-

WARD NUMBER. 1	Night-Soil Sarkars. 2	Peons. 3	Privy Examiners. 4	Mates. 5	Mehters. 6	Trenching Sardars. 7	Trenching Coolies. 8	Coolies. 9	Domes. 10	Tallyman. 11	Supervisor. 12	Timekeepers. 13	Lamp-trimmer. 14	Gully-Pit Boys. 15	Hired Carts—Conservancy and Town Refuse. 16	Gowkhana Small Carts. 17	Night-Soil Carts. 18	Sullage Carts. 19	N. S. Depôts. 20	Dome Carts. 21	Tindal. 22	Blacksmith. 23	Boiler Man. 24	Stokers. 25	Topmen. 26	Ashmen. 27	Durwan. 28	Number of Privies. 29	Number of Urinals. 30	Number of Free Latrines. 31	Number of Jamadari Latrines. 32	Mileage of Roads. 33	Length of Drains. 34
																																M. F. FT.	M. F. FT.
19 - - -	1	2	1	6	114	-	-	85	1	1	-	-	-	-	5	35	2	8	1	1	-	-	-	-	-	-	1	3,328	-	-	-	15 3 386	30 4 378
20 - - -	1	2	1	5	95	1	10	45	1	-	-	-	-	-	2	18	4	9	-	1	-	-	-	-	-	-	-	2,357	-	-	4	14 1 600	34 6 560
21 - - -	1	2	1	4	98	-	-	41	1	-	-	-	-	-	2	26	-	9	-	1	-	-	-	-	-	-	-	2,839	-	-	1	32 1 165	63 2 605
22 - - -	1	2	1	9	186	1	23	56	1	1	-	-	-	-	4	39	6	8	-	1	-	-	-	-	-	-	-	5,839	1	3	4	20 1 253	36 6 184
23 - - -	1	2	1	8	66	-	-	40	1	-	-	-	-	-	32	-	8	6	-	1	-	-	-	-	-	-	-	1,548	-		-	16 4 53	28 0 283
24 - - -	1	2	1	2	72	-	2	42	1	-	-	-	-	-	21	-	-	8	1	1	-	-	-	-	-	-	-	2,177	-	1	1	15 6 17	31 4 609
25 - - -	1	2	1	4	110	-	-	40	1	-	-	-	-	-	27	-	30	7	-	1	-	-	-	-	-	-	-	2,509	-	1	1	11 5 459	24 3 929
Budge-Budge Depôt.	-	2	-	-	6	-	-	-	-	-	1	2	1	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	—	—
Guragatcha Incineration.	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2	-	-	-	-	-	1	1	1	6	8	6	1	-	-	-	-	—	—

Enclosure No. 13.

NOTIFICATION No. 300, dated Simla, 12th October 1896.

THE following rules for quarantine against plague which have been made by the Bombay Government in exercise of the power conferred by section 1, Act I of 1870, with the previous sanction of the Governor General in Council, are published for general information.

The rules have effect from the 5th October 1896, as a temporary measure, in the Ports of Aden, Perim and the Somali Coast:

I.—The commander of every vessel, including buggalows or other native craft, arriving at Aden, Perim and the Somali Coast from Bombay, shall, before entering the harbour, hoist a yellow flag (or if entering a port at night time, show whatever quarantine light signals are customary in the port) and indicate by signal the port from which such vessel has come, and shall keep such flag and signals flying until permitted to take them down as hereinafter provided. The pilot on going alongside a vessel from Bombay shall direct the flag prescribed above to be hoisted, if it has not already been done.

II.—Such commander shall not, without first having obtained permission as hereinafter provided, allow any communication, except orally, with the shore or any other vessel or boat, excepting with the boat supplying pilots, and in that case communication shall be limited to receiving on board the pilot, his servant and baggage.

III.—On any such arrival being signalled, the Health Officer of the port shall, as soon as possible, go alongside the vessel and ascertain by enquiry from the commander whether any person on board is suffering, or has during the voyage suffered, from plague, and if the Health Officer is satisfied by such inquiry that no person on board is suffering, or during the voyage has suffered, from plague, and if the ship carries a qualified medical officer, quarantine shall be dispensed with, and pratique granted. If the vessel does not carry a qualified medical officer, he shall direct the commander to take the vessel to the quarantine anchorage duly appointed and notified by the Resident, and there, to remain for a period of eight clear days from the date of arrival in the harbour. The Health Officer shall also direct the commander to prohibit, during the period for which the vessel remains at the quarantine anchorage as aforesaid, all communication, except such as is hereinafter provided for, between such vessel and the shore or other vessels and boats in the harbour.

IV.—If the Health Officer, as the result of the inquiry made under paragraph III above, shall have reason to believe at the time when the vessel arrives in the harbour that any person on board is suffering, or during the voyage has suffered, from plague, he shall direct the commander to take the vessel to the quarantine anchorage as aforesaid, and there to remain for a period of 15 days from the day of arrival in the harbour; and shall further direct that during such 15 days intercourse between the said vessel and the shore or other vessels and boats in the harbour shall be prohibited as provided in Rule III.

V.—If during the period a vessel is at the quarantine anchorage aforesaid any case or cases of plague should occur on board, the said vessel shall remain in quarantine for a period of 15 days from the date of termination of the last case either by death, recovery or removal from the vessel, and be subject to all the prohibitions provided for in Rules III and IV.

VI.—When any vessel has been placed in quarantine as aforesaid, the Health Officer may direct the removal of so many of the passengers and crew as may not be suffering from illness, and whose services may not be required on board the vessel, to such particular spots as may from time to time be selected by the Resident as places of quarantine, there to remain for a period of eight days, or if the vessel has been placed in quarantine for 15 days, for a period of 15 days. If a case of plague occurs among such passengers and crew during any such period, they shall remain in a place of quarantine for a period of 15 days from the date of the occurrence of the last case of such illness.

VII.—Any mails or cargo which may be brought by any vessel so arriving shall be landed under such precautions as the Health Officer may deem necessary to prevent the spread of the disease.

VIII.—It will be the duty of the Port Officer to facilitate the conveyance to all vessels in quarantine of such supplies of provisions, stores and other articles as may be required by those on board. Such supplies will be placed on the boats of the vessels in quarantine, to be subsequently removed by members of their crews.

IX.—All vessels arriving at Aden, Perim and the Somali Coast, which may have communicated with vessels coming from Bombay, shall be subjected to the same rules as vessels arriving at Aden, Perim and the Somali Coast from Bombay.

H. J. S. COTTON,
Officiating Secretary to the Government of India.

NOTIFICATION No. 359, dated Simla, 23rd October 1896.

The following rules for quarantine against plague which have been made by the Bengal Government in exercise of the power conferred by Section 1, Act I. of 1870, with the previous sanction of the Governor General in Council, are published for general information.

The rules have effect from the 21st October 1896, as a temporary measure, at the Port of Calcutta:

I.—The commander of every vessel, including buggalows or other native craft, arriving from Bombay, shall, on arrival at the Sandheads, hoist a yellow flag, and indicate by signal the port from which she has come, and shall keep such flag and signal flying until permitted to take it down as hereinafter provided. The pilot on going alongside a vessel from Bombay shall direct the flag prescribed above to be hoisted, if it has not already been done.

II.—The commander shall not, without first having obtained permission as hereinafter provided, allow any communication, except orally, with the shore or any other vessel or boat, excepting only with the boat supplying the pilots* from the pilot brig, and in that case communication shall be limited to receiving on board the pilot, his leadsman, servant and baggage.

III.—If there is any case of sickness on board, and the pilot has reason to believe that it is plague, he shall telegraph to the port officer from Saugor, and not proceed beyond Diamond Harbour without the permission of the Port Officer.

IV.—If the pilot has no reason to believe that there is any one suffering from plague on board, he shall bring the vessel up the river to Mateeabrooj, and shall anchor it there till the Health Officer has visited it.

V.—The Health Officer, as soon as he has received information of the arrival of the vessel at Mateeabrooj, shall visit it, and ascertain by inquiry from the commander, or the medical officer on board, or other sources of information, whether any person on board is suffering, or has suffered, from plague.

VI.—If the Health Officer is satisfied that no one is suffering from plague, or has suffered from plague since the vessel left Bombay, and if the vessel has been allowed pratique at any intermediate port, including Colombo, he shall allow the passengers to land, but shall detain the vessel at Mateeabrooj till such measures have been taken for the disinfection of the mails and cargo and hold as he may consider necessary.

VII.—When he is satisfied that the necessary measures have been taken for the disinfection of the mails, cargo and hold, he shall allow the mails and cargo to be landed, and shall by writing under his hand, to be delivered to the commander, permit such vessel to haul down the yellow flag, and to proceed upwards in the port, and to hold free communication with the shore and with vessels and boats in port.

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* *N.B.*—Pilotage is compulsory for all vessels over 100 tons in the Port of Calcutta.

VIII.—If the vessel has not been allowed pratique at Colombo or other intermediate ports, or if through her not carrying a qualified medical officer, or for other reasons, the Health Officer is not satisfied that no one on board has suffered during the voyage from plague, he shall direct the commander to take the vessel to the quarantine anchorage at Mateeabrooj or elsewhere duly appointed by the Port Officer, there to remain for a period of eight days from the date of arrival in harbour. The Health Officer shall also direct the commander to prohibit, during the period for which the vessel remains at the quarantine anchorage as aforesaid, all communication, except such as is hereinafter provided for, between such vessel and the shore, or other vessels or boats in the harbour.

IX.—If the Health Officer, as the result of the inquiry made under paragraph V above, shall have reason to believe, at the time when the vessel arrives in the harbour, that any person on board is suffering from plague, or if during the time the ship is in quarantine at Mateeabrooj, under Rule VIII, any case of the disease breaks out, he shall direct the commander to take the vessel to the quarantine anchorage at Diamond Harbour, or elsewhere duly appointed by the Port Officer, there to remain for a period of 15 days from the day of arrival in the harbour; and shall further direct that during such 15 days, intercourse between the vessel detained under this Rule, or Rule III, and the shore or other vessels or boats in the harbour, shall be prohibited as provided in Rule II.

X.—If during the period a vessel is at the quarantine anchorage aforesaid any case or cases of plague should occur on board, the said vessel shall remain in quarantine for a period of 15 days from the date of the last case occurring, and be subject to all the prohibitions provided for in Rule IX.

XI.—When any vessel has been placed in quarantine as aforesaid, the Health Officer may direct the removal of so many of the passengers and crew as may not be suffering from illness, and whose services may not be required on board the vessel, to such particular spots as may from time to time be selected by the Port Officer as places of quarantine, there to remain for a period of eight days if under Rule VIII, or if the vessel has been placed in quarantine for 15 days, for a period of 15 days. If a case of plague occurs among such passengers and crew during any such period, they shall remain in a place of quarantine for a period of 15 days from the date of the occurrence of the last case of such illness.

XII.—It will be the duty of the Port Officer to facilitate the conveyance to all vessels in quarantine of such supplies of provisions, stores and other articles as may be required by those on board. Such supplies will be placed on the boats of the vessels in quarantine, to be subsequently removed by members of their crews.

H. J. S. Cotton,
Officiating Secretary to the Government of India.

Notification.—No. 387, dated Simla, 4th November 1896.

The following rules for quarantine against plague, which have been made by the Madras Government in exercise of the power conferred by Section 1, Act I of 1870, with the previous sanction of the Governor General in Council, are published for general information.

The rules have effect from the 28th October 1896 as a temporary measure at the port of Madras:

I.—The commander of every vessel arriving from Bombay shall, before entering the port, indicate his arrival by signal.

II.—Such commander shall not, except as hereinafter provided, allow any communication, either with the pilot boat, except orally, or with the shore, or with any other vessel or boat in the port.

III.—Immediately on any such arrival being signalled, the Health (or other Medical) Officer of the port shall go alongside the vessel and ascertain, by inquiry from the commander whether any person on board is suffering, or has during the voyage suffered, from plague. If there is no case of plague on board, pratique may be granted at the discretion of the Health Officer whether the vessel carries a qualified medical officer or not. Pratique granted at Colombo will be recognised.

IV.—If the Health Officer shall have reason to believe at the time when the vessel arrives in the port that any person on board is suffering, or during the voyage has suffered, from plague, he shall direct the commander to take the vessel to the quarantine anchorage, and there to remain for a period of 15 days from the day of arrival in the port; and shall further direct that, during such 15 days, intercourse between the said vessel and the shore or other vessels and boats in the harbour shall be prohibited.

V.—If, during the period a vessel is at the quarantine anchorage aforesaid, any case or cases of plague should occur on board, the said vessel shall remain in quarantine for a period of 15 days from the date of the last case occurring, and be subject to all the prohibitions provided for in Rule IV.

VI.—When any vessel has been placed in quarantine as aforesaid, the Health Officer may direct the removal of so many of the passengers and crew as may not be suffering from illness, and whose services may not be required on board the vessel, to such particular spots as may from time to time be selected as places of quarantine, there to remain for a period of 15 days. If a case of plague occurs among such passengers and crew during any such period, they shall remain in a place of quarantine for a period of 15 days from the date of the occurrence of the last case of such illness.

VII.—Any mails or cargo which may be brought by any vessel so arriving shall be landed under such precautions as the Health Officer may deem necessary to prevent the spread of the disease.

VIII.—It will be the duty of the Port Officer to facilitate the conveyance to all vessels in quarantine of such supplies of provisions, stores, or other articles as may be required by those on board. Such supplies will be placed on the boats of the vessels in quarantine, to be subsequently removed by members of their crews.

IX.—All vessels arriving at the port which may have communicated with infected vessels coming from Bombay shall be subjected to the same quarantine as vessels arriving from Bombay with plague on board.

J. P. Hewett,
Secretary to the Government of India.

Notification.—No. 369.—Simla, October 29, 1896.

The following rules for quarantine against plague which have been made by the Chief Commissioner of Burma in exercise of the power conferred by Section 1, Act I. of 1870, with the previous sanction of the Governor General in Council, are published for general information.

The rules have effect from the 20th October 1896, as a temporary measure in the Port of Rangoon :—

I.—The commander of every vessel, including junks or other native craft, arriving from Bombay, shall, on arrival at the pilot brig hoist a yellow flag and indicate by signal the port from which she has come.

II.—Such commander shall not, except as hereinafter provided, allow any communication either with the shore or with any other vessel or boat except with the boat supplying a pilot from the pilot brig, and in that case communication shall be limited to receiving on board the pilot, his servant, if any, and baggage.

III.—The pilot shall not take such vessel higher than Elephant Point, but shall anchor it there until the Health Officer of the port has visited it and ascertained by inquiry from the commander whether any person on board is suffering, or has during the voyage suffered, from plague. If the Health Officer is satisfied by such inquiry that no person on board is suffering, or during the voyage has suffered, from plague, or if the vessel has undergone since leaving Bombay a quarantine which is properly proved for not less than eight days at Colombo or some other British port, the Health Officer shall, by writing under his hand to be delivered to the commander, permit such vessel to haul down the yellow lag and proceed upwards in the port and hold free communication with the shore and with vessels and boats in port. If the ship has not undergone eight days' quarantine at Colombo or some other British port since leaving Bombay, the Health Officer shall direct the commander to take the vessel to the quarantine anchorage and there to remain for a period of eight days from the date of arrival in the harbour. The Health Officer shall also direct the commander to prohibit, during the period for which the vessel remains at the quarantine anchorage as aforesaid, all communication, except such as is hereinafter provided for between such vessel and the shore, or other vessels and boats in the harbour.

IV.—If the Health Officer shall have reason to believe at the time when the vessel arrives in the harbour that any person on board is suffering, or during the voyage has suffered, from plague, he shall direct the commander to take the vessel to the quarantine anchorage as aforesaid, and there to remain for a period of 15 days from the day of arrival in the harbour; and shall further direct that during such 15 days' intercourse between the said vessel and the shore or other vessels and boats in the harbour shall be prohibited as provided in Rule III.

V.—If during the period a vessel is at the quarantine anchorage aforesaid any case or cases of plague should occur on board, the said vessel shall remain in quarantine for a period of 15 days from the date of the last case occurring, and be subject to all the prohibitions provided for in Rules III and IV.

VI.—When any vessel has been placed in quarantine as aforesaid, the Health Officer may direct the removal of so many of the passengers and crew as may not be suffering from illness, and whose services may not be required on board the vessel, to such particular spots as may from time to time be selected by the Chief Commissioner as places of quarantine, there to remain for a period of eight days, or, if the vessel has been placed in quarantine for 15 days, for a period of 15 days. If a case of plague occurs among such passengers and crew during any such period, they shall remain in a place of quarantine for a period of 15 days from the date of the occurrence of the last case of such illness.

VII.—Any mails or cargo which may be brought by any vessel so arriving shall be landed under such precautions as the Health Officer may deem necessary to prevent the spread of the disease.

VIII.—It will be the duty of the Conservator of the port to facilitate the conveyance to all vessels in quarantine or such supplies of provisions, stores, and other articles as may be required by those on board. Such supplies will be placed on the boats of the vessels in quarantine to be subsequently removed by members of their crews.

IX.—All vessels arriving at Rangoon, which may have communicated with any vessel coming from Bombay, shall be subjected to the same quarantine as vessels arriving at Rangoon from Bombay, unless the communication was held after the vessel from Bombay was released from quarantine.

J. P. HEWETT,
Secretary to the Government of India.

NOTIFICATION.—No 386.—Dated Simla, November 3, 1896.

THE following rule for quarantine against plague which has been made by the Chief Commissioner of Burmah in exercise of the power conferred by Section 1, Act I of 1870, with the previous sanction of the Governor General in Council, is published for general information in substitution of Rule III of the rules for quarantine against plague published in Notification No. 369, dated 29th October 1896.

III. The pilot shall not take such vessel higher than Elephant Point, but shall anchor it there until the Health Officer of the port has visited it and ascertained by inquiry from the commander whether any person on board is suffering, or has during the voyage suffered, from plague. If the Health Officer is satisfied by such inquiry that no person on board is suffering, or during the voyage has suffered, from plague, the Health Officer may, by writing under his hand to be delivered to the commander, permit such vessel to haul down the yellow flag and proceed upwards in the port, and hold free communication with the shore and with vessels and boats in port. Provided that, if the vessel has undergone since leaving Bombay a quarantine, which is properly proved, for not less than eight days at Colombo, or some other British port, the Health Officer shall grant such permission as aforesaid.

If the vessel has not undergone eight days' quarantine at Colombo or some other British port since leaving Bombay, the Health Officer may direct the commander to take the vessel to the quarantine anchorage, and there to remain for a period of eight days from the date of arrival in the harbour. In such case the health officer shall also direct the commander to prohibit, during the period for which the vessel remains at the quarantine anchorage as aforesaid, all communication, except such as is hereinafter provided for between such vessel and the shore, or other vessels and boats in the harbour.

J. P. Hewett,
Secretary to the Government of India.

Notification.—No. 354.—Dated Simla, October 22, 1896.

The following rules for quarantine against plague which have been made by the Bombay Government in exercise of the power conferred by Section 1, Act I of 1870, with the previous sanction of the Governor General in Council, are published for general information.

The rules have effect from the 13th October 1896 as a temporary measure at the port of Karachi:—

I.—The commander of every vessel, including buggalows or other native craft, arriving at Karachi from Bombay shall, before entering the harbour, hoist a yellow flag (or if entering a port at night time, show whatever quarantine light signals are customary in the port) and indicate by signal the port from which such vessel has come, and shall keep such flag and signals flying until permitted to take them down as hereinafter provided. The pilot on going alongside a vessel from Bombay shall direct the flag prescribed above to be hoisted, if it has not already been done.

II.—Such commander shall not, without first having obtained permission as hereinafter provided, allow any communication, except orally, with the shore or any other vessel or boat, excepting with the boat supplying pilots, and in that case communication shall be limited to receiving on board the pilot, his servant and baggage.

III.—On any such arrival being signalled, the Health Officer of the port shall, as soon as possible, go alongside the vessel and ascertain by enquiry from the commander whether any person on board is suffering, or has during the voyage suffered from plague, and if the Health Officer is satisfied by such enquiry that no person on board is suffering, or during the voyage has suffered, from plague, and if the ship carries a qualified medical officer, quarantine shall be dispensed with and pratique granted.

If the vessel does not carry a qualified medical officer, he shall direct the commander to take the vessel to the quarantine anchorage duly appointed and notified by the Commissioner in Sind, and there to remain for a period of eight clear days from the date of arrival in the harbour. The Health Officer shall also direct the commander to prohibit, during the period for which the vessel remains at the quarantine anchorage as aforesaid, all communication, except such as is hereinafter provided for, between such vessel and the shore or other vessels and boats in the harbour.

IV.—If the Health Officer, as the result of the inquiry made under paragraph III above, shall have reason to believe at the time when the vessel arrives in the harbour that any person on board is suffering, or during the voyage has suffered, from plague, he shall direct the commander to take the vessel to the quarantine anchorage as aforesaid, and there to remain for a period of 15 days from the day of arrival in the harbour; and shall further direct that during such 15 days' intercourse between the said vessel and the shore or other vessels and boats in the harbour shall be prohibited as provided in Rule III.

V.—If during the period a vessel is at the quarantine anchorage aforesaid any case or cases of plague should occur on board, the said vessel shall remain in quarantine for a period of 15 days from the date of termination of the last case either by death, recovery or removal from the vessel, and be subject to all the prohibitions provided for in Rules III and IV.

VI.—When any vessel has been placed in quarantine as aforesaid, the Health Officer may direct the removal of so many of the passengers and crew as may not be suffering from illness, and whose services may not be required on board the vessel to such particular spots as may from time to time be selected by the Commissioner in Sind as places of quarantine, there to remain for a period of eight days, or if the vessel has been placed in quarantine for 15 days, for a period of 15 days. If a case of plague occurs among such passengers and crew during any such period, they shall remain in a place of quarantine for a period of 15 days from the date of the occurrence of the last case of such illness.

VII.—Any mails or cargo which may be brought by any vessel so arriving shall be landed under such precautions as the Health Officer may deem necessary to prevent the spread of the disease.

VIII.—It will be the duty of the Port Officer to facilitate the conveyance to all vessels in quarantine of such supplies of provisions, stores and other articles as may be required by those on board. Such supplies will be placed on the boats of the vessels in quarantine to be subsequently removed by members of their crews.

IX.—All vessels arriving at Karachi which may have communicated with vessels coming from Bombay, shall be subjected to the same rules as vessels arriving at Karachi from Bombay.

H. J. S. Cotton,
Officiating Secretary to the Government of India.

From the GOVERNMENT of INDIA to the SECRETARY OF STATE FOR INDIA.

(Sanitary, No. 5.)

My Lord,

Calcutta, February 10, 1897.

In continuation of our Despatch, No. 1 (Sanitary), dated the 27th January last, we have the honour to give, for your Lordship's information, a further account of the course of the plague and the measures we have taken to combat it.

2. We much regret that we are unable to report that the plague shows any signs of abating. In both Bombay and Karachi there has been an increase in the daily number of seizures and deaths since the beginning of the current month. In Poona cases of local origin continue to occur, and the Government of Bombay have informed us that the disease must be considered to be endemic there and also, it is to be feared, in portions of the Thana district in the neighbourhood of Bombay. The disease is, however, not as yet endemic in any other place, and outside the Bombay Presidency and Baroda State only a few isolated cases have been reported among immigrants from the affected area. Statements are appended to this Despatch showing the number of seizures of and deaths from plague in the town and island of Bombay, in Karachi, and in other places which have occurred since those included in the similar statements appended to our Despatch of the 27th January. In that Despatch it was stated that during the week ending the 21st January the reported number of deaths in Bombay averaged 74 a day. From the 22nd January to the end of the month there was a fall in the daily average, which amounted to 63, but from the beginning of the current month there has been an increase, the average from the 1st to the 8th February being 101. The total number of deaths from plague reported in Bombay during January was 1,825 against 1,160 during December, and from the beginning of the outbreak up to the 8th February the total number amounts to 4,339. The weekly mortality returns for

Bombay for the weeks ending the 26th January and the 2nd February show a daily average of deaths from all causes of 242 and 232 respectively, against a normal mortality of 70 and 71 respectively. In Karachi the daily average number of deaths was during the week ending the 20th January, 29, and from the 21st January to the end of the month, 28. Between the 1st and the 8th February it has risen to 42. The total number of deaths that have been reported from Karachi since the beginning of the outbreak is 1,142. From Poona, 390 deaths in all have been reported, and from the district of Thana, 630.

3. The situation appeared to us to be of such gravity, having regard to the high mortality, the persistence of the disease in Bombay and Karachi, the apprehension that it might spread and become endemic in other places, the injury that was resulting to the trade of the places affected and the country at large, and the fear that foreign powers might introduce regulations and restrictions disastrous to the commerce of the country, that we considered it necessary to take special powers by legislation, with a view to prevent the spread of, and to suppress the plague, and to guard against infected vessels leaving our ports. With this object a Bill "to provide for the better prevention of the spread of dangerous epidemic disease" was introduced in the Council of the Governor-General on the 28th January, and passed into law on the 4th February. In our telegram of the same date we informed your Lordship of the introduction of the measure and of its general terms. A copy of the Act, which is styled the Epidemic Diseases Act, 1897, is forwarded with this Despatch for your Lordship's information. The first sub-section of Section 2 of the Act is based on Section 434 of the City of Bombay Municipal Act, and authorises the Governor-General in Council to direct any measures to be taken, and any regulations to be prescribed which are deemed necessary to prevent the outbreak or spread of dangerous epidemic disease, and to direct in what manner the expenses incurred shall be defrayed. The second sub-section of Section 2 empowers the Governor-General in Council in particular to take measures and prescribe regulations for (*a*) the inspection of ships arriving at or leaving port, and the detention of the ship or of any one on board, and (*b*) the inspection of travellers by railway and otherwise, and the segregation of persons suspected of being infected with the disease. The third sub-section of Section 2 empowers the Governor-General in Council to direct that all or any of the powers conferred by the Act may also be exercised by any Local Government with respect to the territories administered by it.

4. Though we have taken power under the Act to ourselves take measures and prescribe regulations, we do not at present consider it necessary to exercise those powers so as to prescribe regulations for observance in places threatened or attacked by the plague. We do not wish to weaken local authority at the present juncture, and we think it best that the powers conferred by the Act should be exercised, under our general control, by Local Governments and Administrations which have greater knowledge of local requirements. In accordance with this determination notifications* were issued, as soon as the Bill had been passed, under Section 2, Sub-section (3), of the Act conferring powers on Local Governments and Administrations, and extending the operations of the Act to places outside British India. We have empowered the Maritime Governments of Bombay, Madras, Bengal, and Burma to exercise all the powers conferred by the Act. The Governments of the North-Western Provinces and Oudh, the Punjab and the Central Provinces, which stand in danger of the spread of infection by land, have been given powers under the first, or general, sub-section of Section 2, and also under the sub-section authorising the examination and detention of travellers. To Assam, Coorg, and Baluchistan, where the danger is more remote, we have, for the present, only conferred powers under this latter sub-section.

We have also given the chief executive authority in places outside British India powers under this same sub-section, and by a separate notification, the Resident in Mysore has been authorised to exercise the powers conferred by the first, or general, sub-section in order to enable him, should this become necessary, to take special measures at Bangalore.

5. In informing the Local Governments and Administrations of the powers conferred upon them under the Act, we considered it advisable to indicate our views on the important subject of the inspection of passengers by railway which falls under Clause (*b*) of the second sub-section of Section 2. We forward for your Lordship's information a copy of our instructions on this point.

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* *Vide* "Gazette of India," Extraordinary, dated the 4th February 1897.

They require that a complete inspection of passengers should be made at certain stations along the lines of railway from Bombay and Karachi, and that they should be generally undertaken by commissioned medical officers to be specially appointed for the purpose. The main stations we suggested are:—

In Bombay and Sind	Kaliyan Bhusawal on the Great Indian Peninsula Railway.
	Palghar Anand on the Bombay, Baroda and Central India Railway.
	Karachi Ruk on the North-Western Railway.
	Hubli on the Southern Mahratta Railway.
In the Central Provinces -	Itarsi on the Great Indian Peninsula Railway.
	Nagpur (altered from Bilaspur at the request of the Chief Commissioner) on the Bengal-Nagpur Railway.
In the North-Western Provinces and Oudh.	Naini on the Great Indian Peninsula Railway.
	Jhansi on the Indian Midland Railway.
In Bengal - - - -	Asansol on the East Indian Railway.
In the Punjab - - -	Raewind Mahmud Kot on the North-Western Railway.
In Rajputana - - -	Bandikui on the Bombay, Baroda and Central India Railway.
In Madras - - - -	Perambur on the Madras Railway.
	Guntakal on the Southern Mahratta Railway.

Possibly inspection at Ahmedabad and at Rutlam will be substituted for inspection at Anand, and the Lieutenant-Governor of the North-Western Provinces and Chief Commissioner of Oudh proposes to fix Saharanpur, Ghaziabad and Agra as additional places of inspection and to substitute Manickpur, the junction of the Indian Midland and Great Indian Peninsula Railways, for Naini as the place of inspection on the Great Indian Peninsula Railway.

The instructions include directions to erect small hospitals for suspected cases at the places where the principal inspections take place, and separate huts for the accommodation of persons suffering from plague. It was explained to the Local Governments and Administrations that these instructions need not supersede any subsidiary inspections of less complete character ordered at other stations. With our Despatch of the 27th January we forwarded copies of letters from the Governments of the Punjab, the North Western Provinces and Bengal regarding the arrangements which had been made by them for medical inspections at railway stations, and with this Despatch are enclosed further communications from Bombay, Madras, the North-Western Provinces and Oudh, the Central Provinces and Rajputana giving details as to the system of inspection prior to the passage of the Epidemic Diseases Act.

6. The provisions of Clause (*a*) of Sub-section 2 of Section 2 of the Act are directed both to the protection of our own ports from infection, and to the protection of our commerce abroad by ensuring as far as possible that the vessels leaving our ports shall not be a source of danger. The provisions directed to the latter end are mainly of importance with regard to the infected ports of Bombay and Karachi. On the day that the Epidemic Diseases Bill was introduced into the Legislative Council we received a telegram from the Government of Bombay, of which a copy is appended to this Despatch, stating that they considered it urgently necessary to medically inspect persons leaving Bombay by sea, and that a complete scheme had been prepared and rules drafted under the Quarantine Act, I of 1870, which are set forth in the telegram. The rules provide for the inspection of officers, crew and passengers, the removal of persons suffering from dangerous disease, and, if necessary, for the detention of the vessel. In reply to their telegram we informed the Government of Bombay that the rules might be at once acted

on and formally issued under the Epidemic Diseases Act as soon as it came into force. We also suggested that similar rules might be prescribed in Karachi. Arrangements are being made at Calcutta for a complete medical examination of all ships leaving the port.

7. It was represented to us that, the plague being endemic in both Karachi and Bombay, it was a needless hindrance to communication and trade to maintain the quarantine rules which issued on the 13th of October for the former against the latter port. After consulting the Government of Bombay, we sanctioned the cancellation of the quarantine rules, rules for the medical inspection of arrivals and other sanitary precautions being substituted for them. The change took place with effect from the 3rd instant.

8. In paragraph 7 of our Despatch of the 27th January we alluded to Surgeon-Major-General Cleghorn's visit to Bombay and the suggestions we made to the Government of Bombay on his advice, regarding the removal of the healthy from infected buildings. The Government of Bombay have not yet informed us to what extent they have been able to carry out these suggestions. We have asked the Government of Bombay to lose no time in sending us a report on the subject and will communicate it in due course to your Lordship. On Dr. Cleghorn's return to Calcutta from Karachi he recorded an interesting note on his inspection there, which, together with our Home Secretary's letter No. 367, dated the 6th instant, conveying remarks on the note to the Government of Bombay, forms an enclosure to this Despatch. Your Lordship will notice that the facts observed by Dr. Cleghorn have led him to the conclusion that in Karachi, as in Bombay, the disease is only slightly, if at all, either contagious or infectious in the common acceptation of these terms, and that the incidence of the disease is mainly due to local causes. The Executive and Municipal authorities at Karachi have been very successful in establishing and providing for the sanitation and water-supply of camps of huts in the open, and in securing the removal of the healthy inhabitants of the infected quarters to these camps. We are awaiting with interest the results of this experiment. We have communicated Dr. Cleghorn's notes on Bombay and Karachi to other Local Governments, and in view of the need for preparations against the possible advent of the plague in Calcutta have suggested to the Government of Bengal that arrangements should be made for the establishment of camps in the neighbourhood of the city. A copy of the regulations that were issued under section 334 of the Calcutta Municipal Consolidation Act, 1888, in October last, when it was feared that some cases of plague had occurred in Calcutta, is appended to this Despatch.

9. We informed your Lordship in our telegram No. 182, dated the 27th January, that Dr. Cleghorn would leave for Venice by the mail of the 6th February to attend the Conference that has been convened to discuss the prevention of the spread of the plague to Europe. We trust that the intimate knowledge he has acquired of the subject will lend great weight to his counsel at the Conference.

10. Mr. Hankin, the Chemical Examiner and Bacteriologist for the North-Western Provinces and Oudh, who, as already reported, was sent to Bombay and has been working as a Member of the Special Medical Board has, in a letter to Dr. Cleghorn, written an interesting account of an outbreak of the plague at the fishing village of Worli, three miles from Bombay. This note, a copy of which is enclosed, affords additional testimony that the disease is fostered by local causes and gives support to the view that it is best combated by the evacuation of infected localities.

11. In paragraph 15 of our Despatch of the 27th January, we informed your Lordship of the measures we had taken to close the Ports of Bombay and Karachi to the pilgrim traffic. We also stated that Calcutta remained open to that traffic, and that the Government of Madras were, at our request, about to declare Madras to be a port for the departure and arrival of pilgrim ships. This declaration the Government of Madras subsequently made. We now forward a copy of further telegraphic correspondence which has passed on the subject between us with the Governments of Madras and Bombay. The Government of Madras have asked that the decision to declare Madras open to pilgrim traffic may be cancelled, as they fear that pilgrims from Bombay may bring infection with them. The closure of Madras to pilgrim traffic would almost certainly lead to a similar demand being made with respect to Calcutta, and, if these two ports were closed, the pilgrimage for this year would be altogether

stopped. We are very averse from taking, except in case of absolute necessity, a step which will be liable to be thought to be an interference with the religious duties of the Muhammadans of India. Your Lordship will see from the correspondence that we do not consider that it is at present necessary to close Madras and Calcutta for pilgrim traffic, although we recognise that it may become so. The majority of pilgrims who would leave these ports do not belong to and will not come from districts which are infected, and the provisions of the Epidemic Diseases Act will permit pilgrims coming from Bombay to Karachi to be detained and segregated before entering Madras or Calcutta until fear of their disseminating infection is passed. We have requested the Government of Bombay to endeavour to persuade pilgrims who are in Bombay from proceeding to Calcutta or Madras, and we have directed that if they persist in doing so they should be detained for 10 days in observation camp near Bombay. We trust that these measures will prove efficacious in preventing any injury being done to either Calcutta or Madras by reason of the fact that pilgrims are permitted to sail to the Hedjaz from those ports.

We have, &c.
(Signed) ELGIN,
&c., &c.

Enclosure No. 1.

STATEMENT of Seizures and Deaths at BOMBAY.

Date.	Seizures.	Deaths.
Total during the month of October 1896 - - - -	389	276
Total during the month of November 1896 - - - -	333	268
Total during the month of December 1896 - - - -	1,655	1,160
Total up to 25th January 1897 -	1,791	1,444
January 26th - - - -	81	48
„ 27th - - - -	94	48
„ 28th - - - -	83	52
„ 29th - - - -	128	69
„ 30th - - - -	110	76
„ 31st - - - -	87	88
Total during January 1897	2,374	1,825
February 1st - - - -	112	86
„ 2nd - - - -	68	97
„ 3rd - - - -	114	98
„ 4th - - - -	116	93
„ 5th - - - -	123	79
„ 6th - - - -	103	114
„ 7th - - - -	81	115
„ 8th - - - -	118	128
Total for 1st to 8th February	835	810
GRAND TOTAL - -	5,586	4,339

STATEMENT of Seizures and Deaths at KARACHI.

Date.	Seizures.	Deaths.
Total during December 1896 -	47	59
Total up to 24th January 1897 -	585	547
January 25th - - -	22	19
„ 26th - - - -	24	19
„ 27th - - - -	27	24
„ 28th - - - -	37	34
„ 29th - - - -	38	33
„ 30th - - - -	43	35
„ 31st - - - -	32	32
Total during January 1897	808	743
February 1st - - - -	59	51
„ 2nd - - - -	20	17
„ 3rd - - - -	49	50
„ 4th - - - -	56	51
„ 5th - - - -	44	43
„ 6th - - - -	37	35
„ 7th - - - -	58	52
„ 8th - - - -	41	41
Total for 1st to 8th February	364	340
GRAND TOTAL - -	1,219	1,142

Statement of Cases of Plague outside Bombay and Karachi.

Date of Report.	Ahmedabad.	Surat.	Broach.	Abu Road.	Marwar.	Poona.	Ahmednagar.	Sholapur.	Dhulia.	Kalyan.	Kolhapur.	Kathiawar.	Thana.	Cutch.	Baroda Territory.	Nasik.	Khandesh.	Khaira.	Satara.	Kotri.	Hyderabad.	Tatta.	Mahi Kantha.	Ratnagiri.	Shikarpur.	Jubbulpore.	Itarsi.	Naosari.	Navasari Division.	Petlad.	Kadi.	Amreli.	Marwar.	Jodhpur.	Belgaum.	Delhi.	Kanara.	Karachi District.
Brought forward	65	15	7	2	4	224	7	3	1	1	1	18	363	26	30	6	6	4	55	1	8	9	2	32	3	1	-	-	-	-	-	-	-	-	-	-	-	-
January 27th - - -	1	2	1	-	-	27	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
„ 28th - - -	-	-	-	-	-	12	1	-	-	-	-	1	59	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
„ 29th - - -	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29	1	1	1	1	1	-	-	-	-
„ 30th - - -	3	-	-	1	-	20	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
February 1st - - -	-	-	-	-	-	26	-	-	-	-	1	-	39	-	2	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	-	-
„ 2nd - - -	-	3	2	-	-	12	-	5	-	-	-	1	-	-	-	-	3	-	-	-	16	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
„ 3rd - - -	3	-	1	-	-	8	1	-	-	-	-	-	-	-	-	-	-	-	3	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
„ 4th - - -	-	-	-	-	-	11	-	-	-	-	-	-	40	-	1	-	-	-	3	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
„ 5th - - -	2	2	-	-	-	14	1	-	-	-	-	5	43	-	-	1	-	2	1	-	1	-	-	41	-	-	-	-	-	-	1	-	-	-	-	-	-	1
„ 6th - - -	-	-	-	-	-	15	1	-	-	-	-	-	28	-	1	-	-	-	2	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2	-
„ 7th - - -	-	-	-	-	-	14	-	-	-	-	-	-	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
„ 8th - - -	-	-	-	-	-	7	3	1	-	-	-	5	17	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2
TOTAL - - -	74	22	11	3	4	390	14	9	1	1	2	30	630	26	34	7	9	6	70	1	29	9	2	74	5	1	2	1	29	1	2	1	1	1	1	3	2	7

Enclosure No. 2.

WEEKLY STATEMENT of Mortality in the Town of BOMBAY.

Week ending	Total Number of Deaths.	Average Number of Deaths during the corresponding period of the preceding Five Years.
26th January - - - - - -	1,693	493
2nd February - - - - - -	1,624	496

Enclosure No. 3.

Act No. III of 1897.

Passed by the Governor General of India in Council.

(Received the Assent of the Governor General on the 4th February 1897.)

AN ACT to provide for the better prevention of the spread of Dangerous Epidemic Disease.

WHEREAS it is expedient to provide for the better prevention of the spread of dangerous epidemic disease; It is hereby enacted as follows:—

Short title, extent and commencement.

1.—(1) This Act may be called the Epidemic Diseases Act, 1897.

(2.) It extends to the whole of British India (inclusive of Upper Burma, British Baluchistan, the Santal Parganas and the Pagana of Spiti); and

(3) It shall come into force at once.

Power to take special measures and prescribe regulations as to dangerous epidemic disease.

2.—(1) When at any time the Governor General in Council is satisfied that India or any part thereof is visited by, or threatened with, an outbreak of any dangerous epidemic disease, the Governor General in Council, if he thinks that the ordinary provisions of the law for the time being in force are insufficient for the purpose, may take or require or empower any person to take such measures and, by public notice, prescribe such temporary regulations to be observed by the public or by any person or class of persons as he shall deem necessary to prevent the outbreak of such disease or the spread thereof, and may determine in what manner and by whom any expenses incurred (including compensation if any) shall be defrayed.

(2) In particular and without prejudice to the generality of the foregoing provisions, the Governor General in Council may take measures and prescribe regulations for—

(a) The inspection of any ship or vessel leaving, or arriving at, any port in British India and such detention thereof, or of any person intending to sail therein or arriving thereby, as may be necessary; and

(b) The inspection of persons travelling by railway or otherwise, and the segregation, in hospital, temporary accommodation or otherwise, of persons suspected by the inspecting officer of being infected with any such disease.

(3) The Governor General in Council may, by general or special order, direct that all or any of the powers conferred by this Act may also be exercised by any Local Government with respect to the territories administered by it.

Penalty.

XLV of 1860.

3.—Any person disobeying any regulation or order made under this Act shall be deemed to have committed an offence punishable under Section 188 of the Indian Penal Code.

Protection to persons acting under Act.

4.—No suit or other legal proceeding shall lie against any person for anything done or in good faith intended to be done under this Act.

Enclosure No. 4.

Telegrams Nos. 304—308 and 310—313 (Sanitary), dated Calcutta, February 4th, 1897.

From the SECRETARY TO THE GOVERNMENT OF INDIA, Home Department, to the GOVERNMENT OF MADRAS; the GOVERNMENT OF BOMBAY; the GOVERNMENT OF THE NORTH-WEST PROVINCES AND OUDH; the GOVERNMENT OF THE PUNJAB; the CHIEF COMMISSIONER OF THE CENTRAL PROVINCES; the CHIEF COMMISSIONER OF ASSAM; the CHIEF COMMISSIONER OF COORG; the AGENT TO THE GOVERNOR GENERAL, BALUCHISTAN; the CHIEF COMMISSIONER OF BURMA.

Epidemic Diseases Bill passed to-day. Section two: Begins. (Here enter section 2 of the Bill.) Ends. Following Notification issued in respect of Madras, Bombay, &c.: Begins. (Here enter Notification No. 302 (Sanitary), dated 4th February 1897.) Ends.

Governor General in Council will not at present issue any regulations under section 2, and trusts Local Governments to issue regulations where they are or may be required.* In respect of regulations under section 2, sub-section 2 (*b*), regarding inspection of travellers by railway, Governor General in Council desires to make the following remarks for consideration of Local Government. It is essential that medical inspection of passengers in trains coming from direction of infected districts shall be complete, and this can only be effected by removal of passengers to platform and individual inspection there by medical officer. The regulations should provide for this.† The Governor General in Council considers that, subject to opinion of Local Government, such inspection might take place at the following places:—

Madras.—Perambur and Guntakal, to each of which places a Commissioned Medical officer should be appointed. Appointment of these officers need not interfere with subsidiary inspections reported in your telegram of 2nd instant.

Bombay.—Kalyan, Anand, Hubli, Karachi, Bhusawal and at some place on Bombay-Baroda line not far from Bombay, possibly Palghar. European Commissioned Medical officers would be required to undertake duty of inspection except possibly at Bhusawal where railway doctor might undertake it.

It seems to the Government of India that inspection now performed at Sukkur by Assistant Surgeon might more usefully be performed at Ruk.

Central Provinces.—Itarsi and Bilaspur. The Government of India think that Commissioned Medical officer should be appointed to former place and will place one at your disposal, if you are unable to appoint one. The work at Bilaspur should be done by Civil Surgeon.

North-Western Provinces and Oudh.—Naini and Jhansi. A European Military Assistant Surgeon should be appointed to Naini and a Commissioned Medical officer at Jhansi. Government of India will provide men if North-Western Provinces Government is unable to do so. These arrangements need not supersede any subsidiary inspections of less complete character ordered by North-Western Provinces Government at other stations.

Punjab.—Government of India think that Commissioned officer now at Khanpur should be removed to Raewind, and the one at Rewari to Bandikui. Also that hospital assistant at Sher Shah should be moved to Mahmud Kot as more suitable place. These arrangements need not supersede any subsidiary inspections of less complete character ordered by Punjab Government at other stations.

Agent to the Governor General for Rajputana.—Bandikui. The Government of India propose that Commissioned Medical officer at Rewari should move to Bandikui. Please place yourself in communication with Punjab Government to secure his services.

Small hospitals should be erected at places where principal inspections take place for suspected cases and separate huts for accommodation of persons suffering from plague.

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* Burmah, Assam and Coorg up to here only.

† Baluchistan up to here only.

Enclosure No. 5.

No. 303, dated Calcutta, 4th February 1897.

From J. P. HEWETT, Esq., C.I.E., SECRETARY TO THE GOVERNMENT OF INDIA, Home Department, to the SECRETARY TO THE GOVERNMENT OF BENGAL.

I AM directed to forward a copy of the Epidemic Act passed to-day by the Legislative Council of the Governor General for the purpose of making laws and regulations, and of a notification under Section 3 thereof conferring on the Government of Bengal powers under Sections 2 (1) and 2 (*a*) and (*b*).

2. The Governor General in Council does not at present propose to issue any regulations under Section 2, and intends that Local Governments should issue them where they are required. I am, however, to say with reference to Section 2, Sub-section (2) (*b*), that His Excellency in Council is of opinion that it is essential that the medical inspection of passengers in trains coming from the direction of infected districts should be complete, and that this can only be effected by the removal of the passengers to the platform, and individual inspection there by the Medical Officer For this purpose the Governor General in Council thinks that a Commissioned Medical Officer should be appointed at Assensole, and I am to ask that, if His Honour the Lieutenant Governor has no objection, this may be arranged for. The special inspection at Assensole need not interfere with any subsidiary inspections of a less complete character at other places which the Lieutenant Governor may prescribe. The Government of India think that it would be undesirable to construct an isolation hospital at Assensole, where there is a large community connected with the railway, but a small hospital for suspected cases, and separate huts for the accommodation of persons suffering from plague, should be provided at some place in the neighbourhood to be approved by the Lieutenant Governor.

3. I am to suggest for His Honour's consideration whether it may not be desirable to give assistance to the Port Health Officer in the conduct of his duties at the present juncture, either by associating with him the protector of emigrants or in some other manner.

Enclosure No. 6.

TELEGRAM No. 309, dated Calcutta, 4th February 1897.

From the SECRETARY TO THE GOVERNMENT OF INDIA, Home Department, to the AGENT TO THE GOVERNOR GENERAL IN RAJPUTANA, Mount Abu.

EPIDEMIC Diseases Bill passed to-day. Section 2: Begins————Ends. Under notification issued to-day the powers conferred by Section 2, Sub-section 2, Clause (*b*), may be exercised by you. Governor General in Council desires to make the following remarks for your consideration. It is essential that medical inspection of passengers in trains coming from direction of infected districts shall be complete, and this can only be effected by removal of passengers to platform and individual inspection there by medical officer. Regulations should provide for this. The Governor General in Council considers that subject to your opinion such inspection might take place at Bandikui. The Government of India propose that commissioned medical officer at Rewari should move to Bandikui. Please place yourself in communication with Punjab Government to secure his services. Small hospitals should be erected at places where principal inspections take place for suspected cases, and separate huts for accommodation of persons suffering from plague.

Enclosure No. 7.

Nos. 369—370, dated Calcutta, 6th February 1897.

From R. NATHAN, Esq., OFFICIATING UNDER SECRETARY TO THE GOVERNMENT OF INDIA, Home Department, to the CHIEF COMMISSIONER OF ASSAM AND COORG.

IN continuation of my Telegram, No. 310—311 (Sanitary), dated the 4th February 1897, informing you of the passing of the Epidemic Diseases Bill, I am directed to forward for your information a copy of a circular telegram to Local Governments and Administrations, Nos. 304—313 (Sanitary), of the same date. This circular indicates the views of the Government of India on the subject of the medical inspection of passengers by rail. I am also to forward for your information copies of letters* from the Government of the Punjab, describing in detail the arrangements made by that Government for the examination of passengers and the isolation and treatment of persons suspected or declared to be suffering from plague.

Enclosure No. 8.

No. 41-P., dated Bombay Castle, 25th January 1897.

From J. De C. Atkins, Esq., I.C.S., Secretary to the Government of Bombay, General Department, to the Secretary to the Government of India, Home Department.

I am directed to acknowledge the receipt of your letter, No. 50, dated the 20th instant, forwarding copies of correspondence relative to the measures taken by the Government of the Punjab to remove and segregate plague cases from railways, and inquiring (1) what arrangements have been made in this Presidency to remove and segregate such cases, and (2) whether any difficulty has been experienced in isolating suspected or declared cases of plague at railway stations.

2. In reply, I am directed to state, for the information of the Government of India, that arrangements have generally been made for dealing with bubonic cases in accordance with Section 73 of the District Municipal Act in municipal areas, and that hospital assistants have been deputed at the principal railway stations in the Presidency to inspect, with the co-operation of railway authorities, passengers from Bombay, and to segregate in isolated sheds and hospitals, provided by municipalities, any cases of plague detected.

3. With regard to the second point, I am to observe that no practical difficulties are believed to have yet arisen, but that as the legality of the action taken is open to doubt, and as there is no legal provision for dealing with plague cases in areas outside municipal limits, His Excellency the Governor in Council proposes to legislate immediately with a view to extend Section 434 of the City of Bombay Municipal Act to all areas, whether municipal or not.

Enclosure No. 9.

Telegram, dated Bombay, 27th January 1897.

From the Secretary to the Government of Bombay, General Department, to the Secretary to the Government of India, Home Department.

61-P. It is considered urgently necessary to medically inspect persons leaving Bombay by sea ; a complete scheme has been prepared, legal advice taken, and the following rules drafted under Quarantine Act I. of 1870, to which sanction of India is requested. Begins : (1) No vessel shall leave the Port of Bombay until she has been inspected by the Health Officer of the port, and the master or person in charge of such vessel has obtained a bill of health, or certificate, from such officer that the master or person in charge, officers, crew, and passengers (if any) of such vessel are free from any infectious disease dangerous to life. (2) Should the Health Officer of the port be of opinion that any person on board of any vessel so inspected is suffering from an infectious disease dangerous to life, he shall refuse to give a bill of health or certificate as aforesaid unless and until such person is removed from the vessel. (3) After the master or person in charge of the vessel has obtained any bill of health or certificate under the provisions of these rules no person or cargo shall be admitted or taken on board such vessel before she leaves the Port of Bombay unless such vessel is again inspected by the Health Officer of the port, and another bill of health or certificate obtained from such officer by the master or person in charge of such vessel. (4) No port clearance shall be delivered to any vessel unless and until the master or person in charge thereof shall produce the bill of health or certificate so to be obtained as aforesaid, and it shall be the duty of customs officers to refuse delivery of the port clearance without the production of such bill of health or certificate. (5) The Government of Bombay may appoint any person or persons by name or by virtue of office health officer or health officers of the port for the purpose of these rules as regards any class or classes of vessels, and may cancel any such appointment. (6) Disobedience to any of the above rules, numbers (1), (2), (3), and (4), will subject the offender, and all persons aiding or abetting him, to a prosecution under Section 271 of the Indian Penal Code Rules. Ends. Please communicate sanction by wire urgent.

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* No. 19, dated 8th January 1897, and enclosures, *see* p. 27; No. 38, dated 16th January 1897, and enclosures, *see* p. 34.

Enclosure No. 10.

Telegram No. 250, dated Calcutta, 28th January 1897.

From the Secretary to the Government of India, Home Department, to the Secretary to the Government of Bombay, General Department.

Your telegram 61, regarding rules medical inspection of ships and bills of health. Government of India doubtful whether they come entirely within Act I of 1870, but they can be acted on. Bill was to-day introduced in Legislative Council, and will be passed next Thursday, which gives power to make such rules, and they can then be formally issued. Are not similar rules required for Karachi? Bill also provides for extension generally of powers conferred by Section 434 of Bombay City Act, referred to in your letter 41, over P. of 25th, so special legislation to extend section generally in Bombay Presidency will be necessary.

Enclosure No. 11.

Telegram dated Madras, 2nd February 1897.

From the Secretary to the Government of Madras, Local and Municipal Department, to the Secretary to the Government of India, Home Department.

Your telegram No. 283 (Sanitary). Passengers from Bombay inspected at Perambur, suburban station of Madras City. Addresses taken and persons observed for ten days. Arrangements are complete for conveying infected persons immediately in special cart to isolation sheds for treatment by medical staff, and separate hospitals are also provided further at frontier stations of Adoni, Bezwada, Guntakal, and Raichur. There are arrangements for inspection. Circular orders also issued requiring district surgeons to arrange for examination and observation at all railway stations in the Presidency which are junctions, or in municipal towns.

Enclosure No. 12.

No. 40, dated Lucknow, 28th January 1897.

From W. H. L. Impey, Esq., Secretary to the Government of the North Western Provinces and Oudh, Sanitation Department, to the Secretary to the Government of India, Home Department.

With reference to your letter No. 51, dated the 20th January 1897, and in continuation of my letter No. 18, dated 16th January 1897, I am directed to forward, for the information of His Excellency the Governor General in Council, a copy of a letter, No. 38, XVI-404 B., of this date to the address of the Inspector General of Civil Hospitals, conveying further instructions with respect to the inspection of passengers at railway stations with a view to the discovery and isolation of cases of bubonic plague.

No. 38, XVI-404 B., dated Lucknow, 28th January 1897.

From W. H. L. Impey, Esq., Secretary to the Government of the North Western Provinces and Oudh, Sanitation Department, to the Inspector General of Civil Hospitals.

A case having occurred in these Provinces in which the body of a woman who had died of bubonic plague was removed from a railway station, and conveyed for some distance on an ecca, it appears that the special arrangements that have been made for the detection of cases of plague are to a certain extent defective. Precautionary measures have been adopted at Jhansi, Agra, Allahabad, Moghul-Sarae, Ghaziabad, and Saharanpur, where medical officers inspect passengers, and temporary hospitals have been established: the station of Cawnpore, as you have been already advised by telegraph, should now be added to the list. At these and other stations where medical officers are located and hospital accommodation exists or can be provided, persons suspected to be suffering from plague should be removed from the train or railway premises, and kept in the observation shed or the temporary hospital. The assistance of the police should be called in if necessary. Friends and attendants accompanying such persons should be kept isolated so long as the medical authorities consider necessary. Suspicion would naturally be excited in the case of sick persons travelling from the direction of Bombay, or of other places where plague is prevalent; and such persons should certainly be detained by the railway authorities, or subordinate medical officers, until they can be inspected by the civil surgeons.

2. As regards the disposal of corpses, instructions will be issued to the railway police to detain any dead body taken out of the train, and those accompanying it in an isolated place in the neighbourhood of the railway station, and to report the matter immediately to the district magistrate and civil surgeon for orders. On receipt of information, the civil surgeon (or a qualified subordinate) should at once proceed to the spot, the magistrate deputing a responsible official to accompany him and to carry out his directions. In cases where death from plague is indicated, the civil surgeon will arrange for the immediate cremation or burial of the corpse, and the isolation of those accompanying it. A body should be buried at a considerable depth, and quick lime should, if possible, be added. As regards the burning of clothes, or other personal effects, you are requested to issue suitable instructions.

Enclosure No. 13.

No. 812, dated Nagpur, 2nd February 1897.

From A. L. SAUNDERS, Esq., I.C.S., SECOND SECRETARY TO THE CHIEF COMMISSIONER, CENTRAL PROVINCES, to the SECRETARY TO THE GOVERNMENT OF INDIA, Home Department.

I AM directed to acknowledge the receipt of your letters Nos. 53 and 71, dated 20th and 21st January respectively, forwarding copies of correspondence regarding the measures taken by the Government of the Punjab for the examination of railway passengers and treatment of cases of bubonic plague discovered at railway stations. The first-mentioned letter asks for information of the arrangements towards these objects made in the Central Provinces. Your telegram, No. 284 (Sanitary), dated 1st instant, has asked for the above particulars by telegram.

2 In reply and in continuation of this office telegram No. 791 of to-day's date, I am to invite a reference to this Administration's letter No. 62-C., dated 5th October 1896, to the Administrative Medical Officer, Central Provinces, a copy of which was forwarded with this Administration's letter No. 72-C., dated 13th *idem* to the Government of India. The Administrative Medical Officer was instructed to make the necessary preliminary arrangements to be put in force should the necessity arise. Medical officers were to be told off to examine railway passengers at the selected stations. Medical and ambulance arrangements were to be in readiness, and the temporary entertainment of a small hospital establishment to be provided for. The erection of thatched huts for hospital accommodation in a selected locality which should be open and unhabitated, was also to be prepared for.

3. Jubbulpur and Nagpur were the places originally selected, in consultation with the railway authorities, for the examination of passengers and the treatment, as above, of any cases of bubonic plague that might be discovered. Subsequently, at the request of the agent of the East Indian Railway Company, it was decided not to undertake, for the present, the detention and examination of railway passengers at Jubbulpur, owing to the inconvenience of the hours of arrival of the trains at that place. The Agent stated that examination of passengers from Bombay was made at Allahabad, which, he thouht, rendered examination at Jubbulpur unnecessary; but at the instance of the Governments of Bengal and the North-Western Provinces, it was arranged that, should the plague further develope, medical examination and detention of patients should be

instituted at Itarsi, the junction of the Great Indian Peninsula and Indian Midland Railways. This was brought into force as reported to the Government of India in this Administration's telegram of the 27th October.

4. On the 15th December the Chief Commissioner received a report of the occurrence on the 8th of the only case of bubonic plague yet known to have occurred in these Provinces.* This was a Brahmin boy of 12, travelling from Bombay, who developed the disease at Bhusawal and died between Shahpura and Mirgunj. The body was taken out of the train at Jubbulpur. The carriage was disinfected and the clothes and bedding of the deceased and his brother, who was the only passenger in the carriage, were burnt. This case was reported to the Government of India in this Administration's letter No. 139, dated 7th ultimo. On receipt of the report from the administrative medical officer, the Chief Commissioner directed the arrangements detailed in paragraph 2 above to be enforced at Jubbulpur also. As a matter of fact, however, some kind of observation had already been maintained since October under the civil surgeon's orders.

5. The arrangements made in the Punjab will be communicated to the administrative medical officer, though the Chief Commissioner considers that, until the disease actually declares itself in these Provinces, the preventive measures already adopted and in readiness for application are sufficient. Medical inspection is at present carried out by medical officers on the provincial establishment under the orders of civil surgeons at Jubbulpur, Itarsi and Nagpur, and at the former station there is also inspection by the railway authorities, as stated in the letter quoted in the last paragraph. The legal difficulty mentioned in No. IV. of the Proceedings of the Punjab Conference had occurred to the Chief Commissioner, and he had arrived at the same conclusion as the Government of the Punjab on this point. Special provision has not been made for cases of the plague among Europeans and Eurasians. The prospect of such cases is remote, and at Nagpur and Jubbulpur there are suitable hospitals for such patients at hand, while Itsari is close to Hoshangabad where they can also be conveniently treated.

6. The request contained in your letter No. 1-Sanitary, 146, dated 22nd January 1897, for telegraphic advice of the occurrence of any cases of bubonic plague in these Provinces has been noted.

Enclosure No. 14.

Telegram No. 791, dated Nagpur, 2nd February 1897.

From the SECRETARY TO THE CHIEF COMMISSIONER OF THE CENTRAL PROVINCES to the SECRETARY TO THE GOVERNMENT OF INDIA, Home Department.

YOUR telegram No. 284 (Sanitary), dated 1st. Inspection carried out by subordinate medical officers under civil surgeons at Jubbulpur, Itarsi and Nagpur. Understood East Indian Railway also assist in inspection at former station. Medical and ambulance arrangements also made. Temporary hospitals provided and establishment entertained. Letter issuing to-day giving further particulars.

Enclosure No. 15.

TELEGRAM No. 554-C., dated Rutlam, 6th February 1897.

From the AGENT TO THE GOVERNOR GENERAL IN RAJPUTANA to the SECRETARY TO THE GOVERNMENT OF INDIA, Home Department.

YOUR telegram 285 of 1st. Passengers are examined at Abu Road, Marwar Junction, Beawar, Ajmere, Jeypore and Bandikui. Huts for isolation of cases exist at Abu Road, Ajmere and Jeypore. Inspection at Beawār and Ajmere conducted by hospital assistants and is under supervision of Civil Surgeon, Ajmere. Administrative Medical Officer reports Ajmere arrangements are particularly good. No cases have been reported in Rajputana since January 15th. It is important that examination of passengers should be strict at Ahmedabad where they change carriages.

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* Another case has just been reported from Itsari, which was reported to the Government of India, in this Administration's telegram No. 792, dated to-day; no particulars of this are yet to hand.

Enclosure No. 16.

NOTE by Director General, Indian Medical Service, on the Outbreak of Bubonic Plague at Karachi.

The first case of the disease was reported to, and observed by, Dr. Kakar, the Health Officer, on the 10th December. The individual attacked was a cook to a Hindu merchant, whose house was situated in the Bunder quarter of the city. He was said to have landed from Bombay on the 8th or 9th December, but the evidence on this point is certainly not clear, was attacked with fever on the latter date, and died on the 10th, with all the symptoms of plague. When the fever declared itself, the man was removed from the house in the Bunder quarter to another in the Ranchore quarter, where he died. No other case has occurred in either of these houses.

The second observed case appeared on the 11th December in the Old Town quarter in the person of a broker, whose office is in the Bunder quarter in close proximity to the house in which the first case occurred, but his residence was situated in the Old Town quarter.

Beyond the above there appears to be no clear and distinct evidence of the importation of the disease into Karachi by human intercourse, but it is admitted that cases may have occurred previous to those noted, although not reported.

As in Bombay, the appearance of the disease was followed by a great mortality among rats.

The population of the city of Karachi, according to the census of 1891, amounted to 98,195, one-fifth of that number may be added for natural increase, which will bring the present population up to 117,834.

The town, excluding Cantonments and Harbour, is divided into 31 quarters or wards, and up to 24th January 606 deaths have been reported from 14 of these wards; the remaining 17 have been entirely free. The incidence of these deaths in the 14 wards was as follows:—

No.	Quarters.	Number of Deaths.	Estimated Population.
1	Ranchore - - - - - -	5	8,986
2	Old Town - - - - - -	407	11,489
3	Machi Miani - - - - -	66	3,721
4	Market - - - - - - -	49	8,107
5	Bunder - - - - - - -	22	1,277
6	Napier - - - - - - -	18	10,274
7	Lyari - - - - - - -	13	27,056
8	Serai - - - - - - -	2	4,916
9	Garden - - - - - - -	10	7,494
10	Sadar Bazar - - - - - -	1	9,087
11	Ramswamy - - - - - -	1	1,777
12	Rambagh - - - - - -	1	3,758
13	Civil lines - - - - - -	1	1,394
14	Jail (the quarter so called) - -	10	4,565
	TOTAL - - -	606	—

The worst parts of the town are the quarters named Old Town, Machi Miani, Market, and Bunder, where the greatest mortality has occurred. The two former face the bed of a dry stream, extending backwards until they become contiguous with the other quarters. Many of the houses I visited in the quarters above-named were quite unfit for human habitation, there were no openings for the admission of air and light, the rooms were overcrowded, and the inmates lived in complete darkness. The Old Town is the worst in these respects, but the overcrowding in houses and of ground area is common to all.

Of the 59 ascertained deaths from plague, which were reported up to 31st December, 40 or 83·1 per cent. occurred in the Old Town, and of the total 606 deaths, 407 or 67·1 per cent. were reported from the same quarter.

It must also be noted that many of the deaths reported from other quarters occurred in fugitives from the Old Town.

The death-rate from plague in Karachi City has, therefore, been only 0·52 per cent. of estimated population, and in the worst quarter, where the greatest mortality has occurred, only 3·5 per cent. on the estimated population of that quarter. This, I think, proves that the disease, as in Bombay, can only be slightly, if at all, either contagious or infectious in the common acceptation of these terms, and the following additional facts warrant me, I think, in coming to the conclusion that the incidence of the disease is due to local conditions.

1. No death has as yet been reported from any of the houses on the exposed edge of the town, *i.e.*, on the one with a frontage to the dry bed of the stream.

2. Comparatively slight extension in the other quarters, and that only in the worst houses.

3. Lyari, a suburb containing an estimated population of 27,000, locally said to be 30,000, situated a quarter to half-a-mile from the Old Town, Mianimachi and Market, is in constant communication with these quarters and receiving fugitives from them. Only 13 deaths up to 24th January. The houses in this suburb are scattered over a large area, and are, as a rule, of small size. There are numerous gardens and open spaces in the area.

4. Khudder, a village with a population of 2,000, chiefly fishermen, situated half a mile from the town; women of the village proceed daily to the town to sell fish, but there were only two deaths up to 26th January. The village consists of huts, each occupied by a single family.

5. Kemari, a village near the port with a population of 2,378. No deaths from plague.

6. No deaths reported among coolies connected with the shipping.

7. Eighty police employed in the city during the 24 hours. No deaths.

8. The immunity enjoyed by officers and subordinates of Health Department.

The houses in which a death has occurred are marked thus ⊕, and the mark is repeated for each death. In visiting all parts of the city with the officers of the Health Department I was struck with the localisation of these marks and their absence from the better class of houses.

The measures which have been taken, and are still in progress, towards arresting the spread of the disease, are cleansing and disinfection of houses in which a death has occurred, greater attention to general cleanliness and, when possible, removal of the healthy from infected houses.

On the 11th January the construction of mat huts on a large space of open ground near the town was commenced, but the people could not be induced to occupy them until the 24th, when the headmen of the Hindus living in the old town agreed to the exodus. On the 27th January there were nearly 400 huts erected, which were then occupied by 2,500 to 3,000 people.

The huts are built separately and arranged along wide streets, water is laid on and all sanitary arrangements are attended to.

The Mahomedans and Kutchers have also agreed to turn out of their houses, and huts are now in course of construction for their occupation.

A population living under these conditions will require careful supervision, and a civil officer has been detailed for the duty. I also recommend that the Deputy Sanitary Commissioner, Dr. Arnim, now in Karachi, should be placed in medical charge of the different camps.

The Bombay Government might be informed that if further medical assistance is required officers can be supplied on application to Government of India.

A house evacuated is not to be re-occupied until its interior has been thoroughly cleansed, disinfected and whitewashed, and these measures should be extended to the other houses in the city.

In addition to these measures it appears to me to be necessary for the future safety of the city that all houses declared by the local medical authority to be unfit for human habitation should be demolished, and the ground acquired by the municipality.

That the local authorities should be authorised to refuse permission to the re-occupation of a house or room until it is placed in a proper state for habitation, and a law should be passed to prevent overcrowding in houses and rooms.

The municipality is, I understand, nearly bankrupt, and is without funds. Assistance should, I think, be given from Imperial sources, as the objects aimed at are of Imperial interest.

It is, I think, generally accepted that the limit of incubation of the plague in a human being is eight to nine days. The facts which have come to my notice support this view, and I would recommend that quarantine should be limited to 10 days.

It was suggested to me when in Karachi, that as the municipal committee is making such great endeavours to stop the progress of the disease, their efforts might be frustrated by allowing passengers from Bombay to land immediately on arrival of the ships, and they think that a quarantine of 10 days from date of departure from Bombay, when no case has occurred on board, might be imposed on all arrivals.

The cargo to be landed in the ordinary course. This appears to be appropriate and justifiable, but Mr. Wingate, the Commissioner, declines to recommend its adoption until it can be clearly proved that arrivals are followed by fresh importation of the disease.

The inward passenger traffic by rail is carefully watched by medical subordinates on the main line, and on those to Quetta and Hyderabad, but I think it advisable that a commissioned medical officer should inspect at Karachi city station and accompany the train to the cantonment station and inspect passengers who may enter at that station.

This medical officer would be under the orders of the Commissioner or magistrate, and would be available for any other duty connected with the plague.

The arrangements now being made at Karachi will be watched with interest, as if the removal of a whole or portion of the inhabitants to huts proves ultimately successful, the procedure may be followed with advantage elsewhere.

It would be a graceful act on the part of the Government of India if the thanks of Government were given to Mr. Wingate, the Commissioner, Mr. Giles, the Magistrate, Mr. Strahan, the Secretary to the Municipal Committee, and to Dr. Kakar, the Health Officer, for the measures they have taken to arrest the progress of the disease. Mr. Strahan's services are especially deserving of commendation. The removal of the inhabitants from the infected portions of the city is being carried out with great judgment and tact.

2nd February 1897. J. CLEGHORN.

Enclosure No. 17.

No. 367, dated Calcutta, 6th February 1897.

From J. P. HEWETT, Esq., C.I.E., Secretary to the Government of India, Home Department, to the SECRETARY TO THE GOVERNMENT OF BOMBAY, General Department.

I AM directed to forward, for the information of His Excellency the Governor in Council, a copy of a note written by Surgeon-Major-General Cleghorn, Sanitary Commissioner with the Government of India, on his recent visit to Karachi.

2. His Excellency in Council will observe that the facts elicited by Dr. Cleghorn's investigation have led him to the conclusion that in Karachi, as in Bombay, the disease is only slightly, if at all, either contagious or infectious in the common acceptation of these terms, and that the incidence of the disease is mainly due to local causes.

3. The Government of India notice with great satisfaction the success that has been achieved by the authorities at Karachi in preparing and arranging for the sanitation of camps of huts in the open, and in securing the removal of the inhabitants of the infected quarters of the city to these camps, and they trust that these measures will help greatly in checking the disease. They are sure that the Government of Bombay will agree with them that the zealous endeavours made to bring about these ends by Mr. Wingate, the Commissioner in Sind; Mr. Giles, the Collector and Magistrate; Mr. Strahan, the Secretary to the Municipal Committee; and Dr. Kakar, the Health Officer, are deserving of great credit.

4. The Governor General in Council desires specially to commend to the consideration of the Government of Bombay the following suggestions made in Dr. Cleghorn's note:—

(a) That Dr. Arnim, the Deputy Sanitary Commissioner now in Karachi, should be placed in medical charge of the different camps, in which Dr. Cleghorn points out that the population will require careful supervision.

(*b*) That a house evacuated should not be re-occupied until its interior has been thoroughly cleansed, disinfected, and whitewashed, and that these measures should be extended as widely as possible.

(*c*) That permission should be refused to the re-occupation of a house or room until it is placed in a proper state for habitation.

(*d*) That overcrowding in houses and rooms should be prevented.

(*e*) That a commissioned medical officer should inspect the railway passenger traffic at Karachi City Station, accompany the trains to the Cantonment Station, and inspect passengers who may enter at that station.

5. In conclusion I am to say that the Government of India will place more medical officers at the disposal of the Government of Bombay if His Excellency in Council considers that more officers are needed.

Enclosure No. 18.

No. 322, dated Calcutta, 5th February 1897.

From J. P. Hewett, Esq., c.i.e., Secretary to the Government of India, Home Department, to the Secretary to the Government of Bengal, Municipal Department.

In continuation of my letter, No. 46, dated the 19th January 1897,* I am directed to forward, for the information of the Government of Bengal, a copy of the papers noted below connected with Surgeon Major-General Cleghorn's visits of medical inspection to Bombay and Karachi, and the remedial measures that have been adopted in those cities.

2. It will be observed that the view of Dr. Cleghorn and of other qualified medical gentlemen who have studied the subject is that the incidence of the disease is to a large extent due to local causes, and that it is at present only slightly epidemic or contagious in the ordinarily accepted sense of these words. They are also of opinion that the best practical means of checking the increase of the plague has been found to be the abandonment and thorough disinfection of infected houses and localities, and the removal of the inhabitants to camps constructed in the open. The authorities at Karachi have been particularly successful in the construction of these camps and in securing the removal of the inhabitants of the infected quarters to them.

3. Should the means adopted to prevent the spread of the disease to Calcutta unfortunately prove ineffectual, it will be necessary to take measures similar to those described by Dr. Cleghorn in order to minimise the evil as far as possible, and, in the opinion of the Governor General in Council, it is desirable that the local authorities should make their preparations now so that there may be no difficulty in taking vigorous action to suppress the disease should it break out. I am therefore to suggest that with permission of his Honour the Lieutenant Governor, arrangements may be made for the construction of camps of refuge in suitable places, in the event of their being ultimately required. The Government of India will be glad to be informed in due course of the arrangements made.

Enclosure No. 19.

No. 3—Sanitary—371-378.

From J. P. Hewett, Esq., c.i.e., Secretary to the Government of India, to the Chief Secretary to the Government of Madras; The Chief Secretary to the Government of the North-Western Provinces and Oudh; The Chief Secretary to the Government of the Punjab; The Chief Commissioner of the Central Provinces; The Chief Commissioner of Burma; The Chief Commissioner of Assam; The Chief Commissioner of Coorg; The Resident at Hyderabad.

Home Department.—Sanitary.

Sir, Calcutta, February 6, 1897.

I am directed to forward, for the information of His Excellency the Governor in Council, His Honour the Lieutenant Governor (and Chief Commissioner), a copy of the papers noted below,* connected with Surgeon-Major General Cleghorn's visits of medical inspection to Bombay and Karachi, and the remedial measures that have been adopted in those places.

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* Home Department Letter, No. 46, dated January 19, 1897, to the Address of the Government of Bombay, *see* p. 26.

Memorandum on the plague by medical practitioners of Bombay, *see* p. 24.

Note by the Sanitary Commissioner with the Government of India on the plague in Karachi, *see* p. 25.

2. It will be observed that the view of Dr. Cleghorn, and of other qualified medical gentlemen who have studied the subject, is that the incidence of the disease is to a large extent due to local causes, and that it is at present only slightly epidemic or contagious in the ordinary accepted sense of these words. They are also of opinion that the best practical means of checking the increase of the plague has been found to be the abandonment and thorough disinfection of infected houses and localities, and the removal of the inhabitants to camps constructed in the open. The authorities at Karachi have been particularly successful in the construction of these camps, and in securing the removal of the inhabitants of the infected quarters to them.

I have, &c.
(Signed) J. P. HEWETT,
Secretary to the Government of India.

Enclosure No. 20.

NOTIFICATION.

No. 4096 Medical.—The 3rd November 1896.—Under Section 334 of the Calcutta Municipal Consolidation Act, 1888, the following Regulations are published for general information.

H. H. RISLEY, Secretary to the Government of Bengal.

WHEREAS it is expedient to adopt special measures for preventing, checking, or mitigating an outbreak of the bubonic plague in Calcutta, and to pass special regulations to give effect thereto, the Commissioners in meeting, with the sanction of the Local Government, prescribe the following regulations under Section 334 of the Calcutta Municipal Consolidation Act, 1888:—

1. These regulations shall come into force from the date on which the plague may be declared by the Medical Board to be prevalent in Calcutta, with the exception of Regulation 8, which shall come into force from the date on which it may be published in the "Calcutta Gazette"; and they shall all remain in operation until such time as they may be countermanded by a notification in the "Calcutta Gazette."

2. Every male householder who becomes cognisant of any case of the bubonic plague or of fever with glandular swellings in his house, shall be bound to give information of the same to the Ward Office with the least practicable delay, unless he has reason to be satisfied that information regarding the case has already reached or been communicated to the Ward Office.

3. The Commissioners may at any time, between sunrise and sunset, after giving such notice of their intention as shall, under the circumstances, appear to them to be reasonable, enter upon any premises and summarily execute any work required under section 318 of the Calcutta Municipal Consolidation Act, 1888, or with a view to abate any or all of the nuisances indicated in clauses (*a*), (*b*), (*c*), (*d*), (*e*) and (*f*) of section 385 of the said Act: provided that when an apartment is in the actual occupancy of a female who, according to the custom of the country, does not appear in public, the Commissioners shall give at least an hour's notice of their intention to enter such apartment, and shall afford her every reasonable facility for withdrawing from such part or portion of the apartment as they may desire to enter.

4. When a dwelling is so overcrowded as, in the opinion of the Medical Board, after personal inspection by at least two members of the Board, to make the inmates thereof

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* Home Department, No. 45, dated January 19, 1897, to the Address of the Government of Bombay, *see* p. 26.
Memorandum on the outbreak of plague in Bombay by medical practitioners of Bombay, *see* p. 24.
Note by the Sanitary Commissioner with the Government of India on the outbreak of plague in Karachi, *see* p. 25.

specially liable to an attack of the bubonic plague, the Commissioners may, by a notice posted on some conspicuous part of the dwelling, require the owner or the occupier, if actually residing in the dwelling, or the tenants or the actual inmates thereof, to abate the overcrowding within 24 hours by reducing the number of lodgers, tenants, or other inmates of the said dwelling as prescribed in the notice; and in default of compliance with the requisition in the said notice, may summarily eject all the inmates, or reduce the number of inmates in such manner and to such extent as may appear necessary: provided that the Commissioners shall provide the inmates so ejected, when necessary, with suitable temporary lodgings in the neighbourhood as far as possible.

5. When a dwelling has, in the opinion of the Medical Board, after personal inspection by at least two members of the Board, been so infected with the plague as to render its further occupation a source of danger to the inmates thereof, the Commissioners may, after giving 24 hours' notice, summarily cause such dwelling to be vacated and thoroughly cleansed and disinfected: and the dwelling shall not be reoccupied until, in the opinion of the Medical Board, it is safe to be reoccupied: provided that the Commissioners shall make suitable arrangements for a thorough disinfection of the clothing, bedding, and other articles removed from the dwelling, and shall provide the inmates thereof, when necessary, with suitable temporary lodgings.

6. If, in the opinion of the Medical Board, after personal inspection by at least two members of the Board, the destruction of any hut or shed is necessary to prevent the spread of the disease, the Commissioners may, after giving reasonable notice, take measures for the destruction of such hut or shed and of the materials of which it is constructed.

7. No rag-picking shall be permitted in the streets or elsewhere, nor shall rags be transported except under such conditions as may be prescribed by the Medical Board, and any person picking rags in the streets or elsewhere shall be liable to be arrested by the police, and the Commissioners may disinfect at their own cost, or, acting under the advice of the Medical Board, may destroy any collection of rags in rag-pickers' houses and rag stores.

8. It shall be lawful for the Commissioners to select a site and erect a hospital thereon, or convert any house or other building into a hospital, for the isolation of patients suffering from the plague in any locality which, in the opinion of the Medical Board, after personal inspection by at least two members of the Board, may be suitable for the purpose.

9. Any vacant house or other building, not being a place of worship, which, after personal inspection by at least two members of the Board, is, in the opinion of the Board, suitable and required for the purpose of an Isolation Hospital, may be entered upon and occupied by the Commissioners without any notice whatsoever, and the owner or the lessee of such house or building shall not be entitled to claim from the Commissioners anything beyond a reasonable rent for the period during which the house or building may remain in their occupation: provided always that the Commissioners shall be bound to thoroughly cleanse, disinfect and limewash the house or building, both internally and externally, before vacating it.

10. The Commissioners shall provide suitable conveyances painted in a conspicuous manner for the free carriage of persons suffering, or suspected to be suffering, from the plague, and for the free transport of any clothing, bedding, or other articles which have been exposed to infection; and it shall be lawful for them to drive such conveyances through any public and private thoroughfare.

11. When in any dwelling there is a patient suffering, or suspected to be suffering, from the bubonic plague, the Commissioners may enter that dwelling at any time between sunrise and sunset, after giving such notice of their intention as shall, under the circumstances, appear to them to be reasonable, and may take measures for segregating and isolating the patient within such dwelling, so far as the circumstances of the case may admit, to the satisfaction of the Medical Board: provided that where a female is suspected to be suffering from the bubonic plague, the Commissioners shall depute a female doctor to examine her; and when the patient, being a male person, and not being below the age of twelve years, cannot be so isolated, and is certified by the Medical

Board, after personal inspection by at least two members of the Board, to be without proper lodging and accommodation, the Commissioners may direct his removal to hospital.

12. The Commissioners may provide and set apart special burial grounds and cremation grounds on the banks of the Hooghly and Adigunga for plague patients, and may declare it unlawful to burn or bury the corpse of a plague patient in any other cremation or burial ground.

13. The Commissioners may, from time to time, by public notice, prescribe the manner in which corpses of plague patients are to be conveyed to burning or burial grounds for disposal.

14. In cases of emergency it shall be lawful for the Chairman, with the consent of the General Committee, to sanction any or all such acts as under the ordinary provisions of the Calcutta Municipal Consolidation Act, 1888, would require the sanction of the Commissioners in meeting: provided that the Chairman shall always convene a special meeting of the Commissioners at the earliest possible opportunity to confirm the sanction so accorded by him; and if the Commissioners in meeting do not confirm the action of the Chairman, such steps shall be taken to carry out the orders of the Commissioners in meeting as may still be practicable.

15. The Commissioners may, in their discretion, pay compensation to any person who has sustained substantial loss or damage by reason of anything done under the powers conferred by these regulations: provided, however, that no person shall be entitled as of right to claim any compensation whatsoever.

H. C. Williams,
Chairman.

The 26th October, 1896.

Enclosure No. 21.

Municipal Laboratory, January 22, 1897.

My dear Surgeon-General,

I have just been to see a very interesting outbreak of the plague at Worli, a fishing village three miles outside Bombay. Here the inhabitants of their own accord made a sanitary cordon, and refused to allow any stranger to enter. As the inhabitants did this of their own free will, as a stranger could obviously be easily recognised, there was a chance for a sanitary cordon to be successful if anywhere. Nevertheless the disease suddenly broke out with appalling virulence. The death-rate has been nearly 95 per cent. About 100 cases have occurred. At present the inhabitants of the village number about 50, and the village is being whitewashed by the Municipality; who are employing 270 men on the work, so they evidently deserve credit for their energy in dealing with the disease. In Worlee the inhabitants have a habit of buying a year's supply of grain at one time and storing it, just as is done in the hills where the disease is endemic. Hence there was the suggestion that the disease was due to some emanation from the stored grain. But most of the villagers are now encamped outside of the village in fields, where they remain free from the disease, but they come into their houses every day to fetch their daily supplies of grain, and they have taken with them their bedding, food, and household utensils. Nevertheless they have left the mysterious disease behind. Here is an argument for evacuation of the locality.

Yours sincerely,
E. H. Hankin.

To Surgeon-General J. Cleghorn, M.D.

Enclosure No. 22.

Telegram No. 78, dated Fort St. George, February 4, 1897.

From the Secretary to the Government of Madras, to the Secretary to the Government of India, Home Department.

The Government regrets extremely your objection to cancel notification making Madras pilgrim port. Risk of introduction of plague greatly increased by arrivals of gangs of pilgrims from Bombay. Such risk should not be incurred except in presence of grave reasons of which Government is ignorant. Effective quarantine on land difficult, if not impossible. The Government strongly urges reconsideration. Madras public feelkeenly on subject. Municipality and other local bodies protest vigorously. Government considers their protests reasonable, and has stopped pilgrims at Bombay, pending further reference to you.

Enclosure No. 23.

Telegram No. 364, dated February 6, 1897.

From the **Secretary to the Government of India**, Home Department, to the **Secretary to the Government of Madras**.

Your telegram of 4th and telegrams received direct from Municipality, Chamber of Commerce, Harbour Trust Trades Association, and Mahajana Sabha, regarding prohibition of departure of pilgrims from Madras have received careful consideration of Government of India. Governor General in Council would wish to assure Government and local authorities that he fully sympathises with them in their endeavours to exclude risk of plague coming to Madras, and would not insist on any measure likely to increase it. It appears to Governor-General in Council that permission to allow pilgrims to depart from Madras will not increase risk. It seems most unlikely that Madras Government need expect large gangs of pilgrims from Bombay. It has been publicly announced for a fortnight that departure of pilgrim ships from Bombay and Karachi was about to be stopped, and endeavours are being made to dissuade pilgrims from going to Haj this year. Bulk of pilgrims do not belong to Bombay or Bombay Presidency and when notice was first given pilgrims from Northern India and Bengal ignored it and went to Bombay. The Government of India therefore anticipate that bulk of pilgrims who would wish to leave Madras would not come from infected area. Government of India have telegraphed to Bombay Government to endeavour to dissuade pilgrims there from going to Haj, and at the same time to arrange to have all who persist and leave Bombay with intention of sailing from Madras and Calcutta, isolated for 10 days at Nassik, or other suitable place, and would suggest that Madras Government might provide for removal from train and isolation at some intermediate station of any who may succeed in evading these orders. Madras and Calcutta only places open for departure of pilgrims, and Government of India are averse from passing orders which will have the effect of stopping pilgrimage and be regarded as interference with religion of Muhammadans.

Enclosure No. 24.

Telegram No. 365, dated February 6, 1897.

From the **Secretary to the Government of India**, Home Department, to the **Secretary to the Government of Bombay**, General Department.

Government of India will be obliged if Bombay Government would endeavour to dissuade all persons, who have arrived in Bombay with intention of going to Hedjaz, from proceeding to either Madras or Calcutta to take ship. Should they persist in doing so, it is essential that they should be isolated for 10 days at some place in Bombay Presidency. Government of India would suggest that neighbourhood of Nassik might be suitable, but leaves it to Bombay Government to fix place, and would be obliged if Bombay Government would without delay make the needful arrangements. Until they have been made no pilgrims who have not abandoned idea of pilgrimage should be allowed to leave Bombay. Intimation should be sent to Madras and Bengal Governments and to local Commissioners of Police whenever any pilgrims leave for either of those places after having passed the prescribed 10 days in isolation.

Enclosure No. 25.

No. 111, dated Lahore, February 3, 1897.

From H. J. **Maynard**, Esq., Junior Secretary to the Government of the Punjab, to the **Secretary to the Government of India**, Home Department.

In continuation of the correspondence ending with your letter No. 49, dated the 20th of January 1897, on the subject of bubonic plague, I am directed to forward, for the information of the Government of India, a copy of a circular* to-day addressed to all de[illegible] commissioners, the headquarters of whose districts are at or near railway stations, o[illegible] subject of the inspection of passengers quitting trains from the infected directions [illegible] stations; and to explain that a copy has been forwarded also to the Assistant [illegible]r-General, Punjab Command, in order that similar orders, if deemed [illegible] issued as regards cantonments on the line of railway.

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* No. 103, dated February 3, 1897.

Circular No. 103, dated Lahore, February 3, 1897.

From H. J. MAYNARD, Esq., Junior Secretary to the Government of the Punjab, to all Deputy Commissioners, except Hazara, Kohat, Bannu, Dera Ismail Khan, Dera Ghazi Khan, Shahpur, Jhang, Kangra, Simla, Rohtak.

As the following authenticated cases of bubonic plague have occurred in the Punjab, viz., one at Rewari, one at Ferozepore, and one at Amritsar (all three imported from Bombay), and as there appears to be some influx of persons from infected localities, the Lieutenant Governor has decided that it is desirable that all railway passengers arriving from the infected directions (Bombay and Karachi), and leaving the trains at stations situated at or close to district head-quarters, should be inspected by medical officers, and orders to this effect are now issuing to the Inspector General of Civil Hospitals. It will be observed that these orders refer solely to passengers leaving the trains. The inspection of passengers who are not leaving the trains will continue to be carried out under orders previously issued, at certain stations only, viz., Khanpur in the Bahawalpur territory, Sher Shah, Raiwind, Bhatinda, and Rewari.

2. At each district head-quarters railway station where such arrangements have not already been made, it will now be desirable to arrange for the construction of hospital and observation sheds. In this connection I am to enclose for your information a copy of a letter[*] from the Inspector General of Civil Hospitals, No. 34, dated 7th January 1897, with suggestions regarding the sheds to be erected.

A Conference which met early in January, and in accordance with whose recommendations orders for inspections at the five railway stations named in my first paragraph were issued, recorded the remarks on this subject which will be found annexed to this letter.[†] The cost of the sheds and furniture and of the dieting and treatment of patients should be met by the local bodies concerned, and it will probably be desirable to place in the hands of the medical officer who conducts the inspections a small advance for any urgent expenditure that he may have to incur.

3. In passing orders upon the proceedings of the Conference already alluded to, the Lieutenant Governor made the following remarks[‡] :—

> His Honour does not "think it would be prudent for an examining officer to attempt forcibly to examine a patient for swelling of the glands." Should a patient be "unwilling to submit to such examination, he should simply be detained as a suspicious case, and, of course, very great caution would be requisite in dealing with females." The Lieutenant Governor accepts the recommendations of the Conference that persons suspected to be suffering from plague should "be detained and kept in the observation shed or the plague shed, as the case may be. The assistance of the police should be called in if necessary.[§]"

4. These orders were communicated to the Government of India,[||] in order that the necessary steps might be taken to legalize what it was proposed to do. The Government of India replied[¶] that in Bombay, where it had already been necessary to isolate and treat a large number of cases discovered at the railway station, the Local Government had not reported that any difficulty had arisen. They preferred not to legislate if it could be avoided, but requested that if any difficulty arose in the Punjab, the Government of India might at once be informed of the facts. Since then a Bill has been introduced into the Legislative Council giving the Governor General in Council large powers of regulation to prevent the outbreak or spread of dangerous epidemic disease, and authority to delegate those powers to a Local Government, but this Bill has not yet become law.

5. A copy of this Circular is being sent to the Assistant Quartermaster General, Punjab Command, in order that similar orders, if deemed desirable, may be issued as regards cantonments on the line of railway.

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[*] Enclosure No. 1. *See* p. 33.

[†] Enclosure No. 2.—Extract from Conference Proceedings, Head V.—Details of arrangements as *to* sheds, establishment, contingencies, &c., Paragraphs 1, 2, and 3. *See* p. 30.

[‡] *Vide* Head IV. of Conference Proceedings—"Removal from train and isolation in temporary hospital." *See* p. 30.

[§] Paragraph 6 of letter to Commissioner and Superintendent, Lahore Division, No. 2, dated January 5, 1897. *See* p. 31.

[||] Letter No. 19, dated January 8, 1897. *See* p. 27.

[¶] Letter No. 49, dated January 20, 1897.

Despatch from SECRETARY OF STATE to the GOVERNOR GENERAL OF INDIA IN COUNCIL, No. 42 (Revenue), dated March 11, 1897.

MY LORD,

SINCE the first outbreak of the bubonic plague at Bombay in September last, I have been in telegraphic communication with your Excellency, and with the Government of Bombay, regarding the progress of the epidemic and the steps taking for preventing the spread of the disease and for relieving sufferers. Your Letter No. 1, dated the 27th January 1897, describes what happened up to the last week of January, your subsequent Letter, No. 5, dated the 10th February 1897, brings the narrative of events to the 8th February, while later telegrams bring the account down to the first week of March.

2. It is now six months since the plague first appeared in Bombay; during that time the disease has spread in epidemic form to some of the suburbs of Bombay, to Karachi, and to Poona; but, despite the occurrence of sporadic cases in Gujarat and elsewhere, it has not as yet gained a serious hold on other towns or districts. Medical men who witnessed the plague at Hong Kong in 1893-94 advise that we must not count on the plague restricting itself to its present limits; and it is clearly necessary that precautions should not be relaxed so long as the disease continues.

3. Up to the present time the reported deaths from plague have been about 10,000, and you apprehend that the true mortality from the disease is above the reported figures. The alarm caused by the plague in India and elsewhere is greater than might have been expected to result from this mortality; one-third of the population of Bombay are said to have left the city; trade and manufactures have been arrested; European and African harbours have declined to admit vessels, passengers, and goods from the infected ports of Bombay and Karachi; and Russia has notified that all India must be treated as contaminated by plague. Not only is there risk of the epidemic spreading to other cities and provinces of India, where millions of people are congregated on relief works and at poor-houses, but for the time a serious injury has been done to India's export trade.

4. The steps taken by the Bombay Municipal Commissioner, the Karachi authorities, the railway executive, and by the Local Governments, under your orders, to check the spread of plague in India and to prevent its being carried to other countries by vessels sailing from infected ports, appear to have been well devised and satisfactorily carried out. As yet the only instance in which plague cases have been reported on ship-board are the two cases on the pilgrim steamer "Pekin" in January, on her voyage between Bombay and the Red Sea. The disease happily did not touch the remainder of the passengers and crew.

5. The measures being taken, at much cost and great labour, to disinfect contaminated and deserted houses in Bombay, Karachi, and Poona, are in accordance with the best expert opinion; and I highly approve the proposal to take such steps with regard to the more unhealthy dwellings as shall make them less liable to be receptacles for pest hereafter. It has to be borne in mind that, even if the plague abates when the rainy season begins, Hong Kong experience shows that it is liable to reappear, though in a less severe form, in the following year.

6. Since your letter was written it has been decided, after communication with your Government, that Moslem pilgrimage from India should be altogether suspended for the present; and an International Conference has met at Venice to consult as to precautions against the spread of the plague to Europe.

7. I am confident that the Government of India and the Local Governments will do everything in their power to relieve sufferers and to prevent the spread of an epidemic which is doing much harm to the people and to the trade of India. In any future report that you may send upon the subject, I should wish it to be made clear that sufficient temporary hospitals, with an adequate staff of doctors and nurses, had been promptly established at each plague centre; and that, where available, women doctors were employed in plague-wards for women. It appears that the Bengal Government took measures to have special hospitals ready in the event of the plague reaching Calcutta; but the information on this point is less complete regarding the plague centres of Western India. The proportion of deaths to cases has been very high throughout, more especially in Karachi; Hong Kong experience showed that recoveries were usually in proportion to the promptitude and completeness with which patients received medical treatment. The unwillingness of Indian sufferers to go to hospital, and of their friends to report seizures, may account for the large proportion of fatal cases. But, when sufficient hospital accommodation of a fair, though improvised, kind is provided, and when adequate medical attendance is available, such unwillingness may be expected gradually to abate.

I have, &c.

(Signed) GEORGE HAMILTON.

To the **President** of the Approaching Conference on the "Plague in India,"
Venice, Italy.

Oriental Government Security Life Assurance
Company (Limited), January 28, 1897.

Sir,

As, from my profession, I naturally take a deep interest in all that concerns the health and welfare of this city (of which I am one of the oldest European residents), I have, from the commencement of the present epidemic, done all in my power to allay the popular anxiety, and thus to assist our local authorities in the execution of their arduous duties in combating the disease.

No one who has read the speech of His Excellency the Governor on the situation at a meeting of native citizens, held yesterday evening at the Secretariat, can fail to take heart of grace and strive his utmost to carry out the views so well expressed by his Lordship.

With the same end in view I have prepared a list of claims from 1st September last, the commencement of the epidemic, to the present date, in connection with the company which I have the honour to represent, and which is the only Life Assurance Company established in India, having a constituency of about 25,000 members, fully four-fifths of whom are natives.

I do so with the twofold object:—First, of allaying the unnecessary alarm which has filled the minds of many; and, second, of placing before the Conference such information on the subject as may assist them in their important deliberations.

The actual epidemic mortality amongst our policy-holders will, I think, be one of the best tests as to the extent of the prevailing disease amongst the middle and well-to-do class of the community.

From the annexed tabular statement it will be seen that only three persons assured with our company for sums aggregating to 5,200 rupees have fallen victims to the malady. The fact is well known here that the present mortality has almost exclusively fallen on those, to be found in all large cities, who are badly clothed, badly fed, and badly housed, and, in consequence, more susceptible to the disease; a class of people who, it may be remembered, never travel to Europe.

I shall be glad if this information will in any way enable the members of the Conference to form a juster opinion of the visitation than can be gathered from accounts of a sensational character which have gone home from time to time since the commencement of the outbreak can do.

In conclusion, may I point out the alarmingly misleading nature of the expression, "the plague in India." The fact is that this peculiar fever has so far been rife only amongst about 0·33 per cent. of the population of the vast empire which the word "India" signifies, and that only an extremely small percentage of that very limited proportion has been attacked.

I have, &c.
(Signed) D. W. Lauchlan Slater,
Fellow of the Institute of Actuaries (London),
Manager and Actuary.

List of Claims completed, before referred to (*i.e.*, from September 1, 1896, to January 28, 1897), on the Oriental (Government Security) Assurance Society of Bombay.

RACE.	Amount Assured.	CAUSE OF DEATH.														Total.
		Cholera.	Bladder and Kidney Disease.	Fever.	Nervous Disease.	Dysentery.	Diabetes.	Heart Disease.	Beri Beri.	Consumption.	Asthma.	Other Lung Diseases.	Accidental Drowning.	Plague.	Liver Disease.	
	Rs.															
European and Eurasian	14,000	–	–	1	–	1	–	1	–	–	–	1	–	–	1	5
Parsee	19,141	1	–	–	–	–	–	–	–	–	–	–	–	3	–	4
Hindu	82,898	–	2	8	4	–	3	2	–	3	1	1	1	–	3	28
Mahomedan	11,818	–	–	–	–	–	–	–	1	–	–	1	–	–	1	3
TOTAL	1,27,857	1	2	9	4	1	3	3	1	3	1	3	1	3	5	40

QUARANTINE ARRANGEMENTS in regard to INDIAN PORTS.

Register Number.	From.	Date.	Place where Quarantine is Imposed.	Duration of Quarantine.	REMARKS.
1409—1896	Telegram from India	12 October	Aden; Karachi	Not stated.	
1565—1896	Foreign Office	6 November	Alexandria (Egypt)	Ships classified as :— (1.) *Indemnes. Conditions.*—Medical inspection, disinfection of clothes, provided 7 days have expired after departure from last infected port. Canal in quarantine subject to favourable medical report; but passengers must first disembark at Moses' Well for disinfection. (2.) *Suspects. Conditions.*—The rules vary according to the circumstances of each particular ship, but, speaking generally, vessels have to be examined and disinfected before entering the canal in quarantine. The longest detention of passengers is 48 hours. (3.) *Infectés. Conditions.*—Same as (2), but detention of ships is 7 days, and of passengers from 2 to 7 days from last case on board,	These are general regulations applicable to all cases of infection, but they were specially applied to Bombay and Coast of Assyr.
1598—1896	Foreign Office	10 „	Egypt	Vessels coming from an infected port (plague), destined for Suakin, to repair to Moses' Well for disinfection; in cases of military officers and soldiers, 3 to 4 days are allowed for this purpose.	
1687—1896	Foreign Office	21 „	Egypt	Healthy vessels to be received in free pratique after disinfection and expiration of 7 days after departure from last infected port. "Indemne" ships to coal inside Port Said, others at Suez. Troopships from Bombay get free pratique, provided they have been disinfected at intermediate port.	
1772—1896	Colonial Office	3 December	Cyprus	10 days quarantine against Bombay.	
1848—1896	Foreign Office	14 „	Egypt	Large animals from clean port are visited by veterinary; small animals the same, and 24 hours observation. Large animals from doubtful ports; visit from veterinary and 24 hours observation; small animals the same, and 48 hours observation. In cases of disease, the animals are landed in quarantine, and slaughtered. Vessels with infected goods pass the canal with free pratique, provided they have complied with the rules in force.	These are general regulations applicable to all cases of infection, and therefore include Bombay.
1914—1896	Colonial Office	29 „	Natal	12 days quarantine against Bombay after disinfection.	
			Malta	7 days observation; no free pratique if fever has broken out.	This applied to India and Kandia.
133—1897	Demi-official, Home Department in India.	30 „	Alexandria; Aden; Calcutta; Madras; Rangoon.	Only states that quarantine has been imposed.	In case of Alexandria, Karachi only is specified in this letter.
31—1897	Colonial Office	4 January	Malta	2 days quarantine on arrival from India.	
130—1897	Colonial Office	16 „	Malta	Quarantine increased from 2 to 20 days.	

157—1897	Foreign Office	18 „	France, Northern and Southern Ports.	Ships classified as :— (1.) *Indemnes.* *Conditions.*—Medical inspection of passengers, and disinfection of goods, if necessary; free pratique, if no case of plague during 7 days after departure from infected area. (2.) *Suspects.* *Conditions.*—Same as (1), but the disinfection is compulsory. (3.) *Infectés.* *Conditions.*—Same as (2), but with the addition of a quarantine of 5 days in cases of cholera, and 7 days in cases of plague.	These are general regulations applicable to all cases of infection, but they have been made specially applicable to Bombay.
163—1897	Foreign Office	18 „	Fao (Persian Gulf)	Quarantine station to be established at Fao, and ships meanwhile repulsed from Busrah.	
183—1897	Foreign Office	18 „	Brindisi (Italy)	No cases of sickness having occurred during voyage, passengers on mail steamers were allowed to land at Lazaretto, and be disinfected, then free pratique; mails landed, and ships proceeded without pratique with original bills of health.	
184—1897	Foreign Office	18 „	Malta	Neither passengers, crew, nor merchandise can be landed. Coals and provisions supplied in quarantine in harbour, provided there have been no cases resembling plague or cholera during voyage, if otherwise, outside harbour.	
197—1897	Colonial Office	21 „	Natal	Proclamation notifying that City of Bombay is a place infected with contagious or infectious disease. Quarantine of 12 days after disinfection imposed.	
199—1897	Foreign Office	21 „	France	Text of decree prohibiting the importation from Bombay of rags, old clothes, bedding, raw hides, &c.	
200—1897	Foreign Office	21 „	Burma	Enquiry as to duration of quarantine against Bombay.	
212—1897	Foreign Office	22 „	France; Algeria	Forbidding transit through France and Algeria of rags, &c., from Bombay or other plague infected locality in India. Cancels decree in 199, and substitutes new decree.	
223—1897	Foreign Office	23 „	Turkey	15 days quarantine on all pilgrim ships coming from India (including Karachi), rigorous disinfection of luggage, &c., the latter to be landed as also susceptible goods. In case of outbreak of plague on board, 20 days quarantine after last death, or ship can return; suspected objects burned.	
237—1897	Telegram from India	25 „	Rangoon; Moulmein; Akyab, and Bassein.	15 days quarantine, if there has been case of plague on board; if not, and vessel has undergone 8 days quarantine at intermediate port, vessel admitted to free pratique; otherwise health officer may at discretion free from severer quarantine, and impose quarantine of 8 days.	
240—1897	Foreign Office	25 „	Egypt	Doubtful whether quarantine at Aden will be accepted by Board as sufficient; must apply to all ships. Pilgrimage should be stopped altogether, failing this, pilgrim ships should quarantine near Aden, before entering Red Sea.	
			Turkey	Measures against plague officially communicated to British Embassy.	
258—1897	Colonial Office	26 „	Malta	Persons from Mediterranean ports must swear they have not been in India for 30 days; otherwise they are medically visited and disinfected in Lazaretto.	
265—1897	Foreign Office	27 „	Egypt	Stoppage of service of postal parcels from infected towns. Persian Gulf free from plague; proposal to quarantine arrivals from Baghdad and places between Bombay and Karachi negatived.	

QUARANTINE Arrangements in regard to Indian Ports—*continued.*

ter er.	From.	Date.	Place where Quarantine is Imposed.	Duration of Quarantine.	REMARKS.
97	Foreign Office	27 January	Belgium	Article 8 of Dresden Convention enforced. In general terms importation of rags, old clothes, &c., forbidden. Vessels classed as— (1.) *Infected.* Sick disembarked and isolated; others subject to observation not exceeding five days; dirty linen, &c., disinfected. (2.) *Suspects.* Medical inspection, disinfected, five days observation recommended. (3.) *Indemnes.* Practically same as No. 2.	
543—1897	Government of India	27 „	Calcutta, Bombay, Madras, Karachi, Burmah.	Quarantine arrangements (15 days).	
277—1897	Foreign Office	28 „	Aden, Persian Gulf, Muscat, Makulla.	Proposals of Constantinople Board of Health, that— (1.) All ships coming from India or Persian Gulf should be quarantined at Aden (period not named). (2.) All pilgrim ships should proceed to Camaran without touching at Aden. (3.) All ships from India should be examined at the entrance of the Persian Gulf.	
288—1897	Colonial Office	29 „	Gibraltar	No pratique for vessels from India; neither passengers nor goods to be landed; Mails and specie landed in quarantine; coal and provisions supplied in quarantine.	
289—1897	Foreign Office	29 „	Germany	Rigid sanitary inspection of ships arriving from Western India and Persia.	
290—1897	Foreign Office	29 „	Egypt	Proposal of Alexandria Quarantine Board that merchandise classed as susceptible should not be allowed to be exported from plague infected ports.	
291—1897	Foreign Office	29 „	Turkey	Dr. Dickson's proposal, that ships from India with cholera should be denied free passage of Suez Canal.	
292—1897	Foreign Office	29 „	Russia	Medical points of observation formed at Persian Gulf, Persia, Caspian, Turkestan, &c.	
293—1897	Foreign Office	29 „	Aden, Persian Gulf, Muscat, &c.	Her Majesty's Government object to policy indicated in 277—1897.	
312—1897	Foreign Office	30 „	France, Algeria	All merchandise from Bombay and Karachi to enter at certain specified ports; all goods which left ports of Indian Ocean, Muscat, Persian Gulf, as far as Cape Comorin, to have a certificate of origin, vised by French Consul.	
313—1897	Foreign Office	30 „	Morocco	Arrivals from India refused admittance.	
314—1897	Colonial Office	30 „	Malta	Passengers on ships from India with clean bill of health land at Comino Island, to undergo disinfection and 21 days quarantine.	

363—1897	Foreign Office	2 February	Hague (Holland)	Ten days' quarantine on arrival from Bombay and Karachi.	
367—1897	Foreign Office	2 ,,	Egypt	Should the plague break out in Mecca, no Egyptian pilgrim will be allowed in Egypt till its disappearance from the Hijaz. Pauper pilgrims not allowed to depart for Mecca. Khedive opposed to total prohibition of pilgrimage.	
368—1897	Foreign Office	2 ,,	Baghdad	Ten days' quarantine on arrivals from Persian Gulf; disinfection of goods, &c., at Bussorah; arrivals from Mohamrah to be refused admission.	
387—1897	Foreign Office	3 ,,	Germany	Ships from Western Indian and Persian Gulf arriving at Bremerhaven placed in sanitary control.	
			Italy	Rules regarding ships from India. Asinata fixed as sanitary station for disinfection.	
415—1897	Foreign Office	4 ,,	Egypt	Importation of certain susceptible goods prohibited. Shipping agents of all nationalities at Port Said urge renewal of restriction against passengers embarking in quarantine.	
416—1897	Foreign Office	5 ,,	Egypt	No vessels quarantined are to arrive at Port Said at night.	
420—1897	Viceroy	5 ,,	Italy	Requesting information as to Italian prohibition.	
423—1897	Foreign Office	6 ,,	Turkey	Turkish Vice Consul, Karachi, complains (1) that plague spread owing to Arab sailing boats carrying dates from India to Busrah and Katif uncontrolled, (2) that no official information is given, and publication of information by newspaper is forbidden.	
424—1897	Foreign Office	6 ,,	Portugal	Ships (passengers and cargo) from Indian ports, Gulf of Oman, and Persian Gulf, placed in quarantine and subjected to vigorous disinfection.	Duration of quarantine not mentioned.
425—1897	Foreign Office	6 ,,	Russia	Frontier medical ports of observation established at Takhta-bazar, Kousekh, Kemur, Kerki, and Aivadja.	
451—1897	Foreign Office	8 ,,	France	Prohibition against landing of cargoes from plague infected ports; duration of quarantine not yet settled.	
472—1897	Foreign Office	9 ,,	France	Ships from plague-infected ports should proceed straight to England, without touching French ports.	
197	Foreign Office	10 ,,	Tunis	Prohibition against importation from Bombay and other Indian infected ports of rags, dirty clothes, raw hides, wearing apparel, untanned leather, animal refuse, shoes, &c.	
506—1897	Foreign Office	11 ,,	Turkey (Bussorah)	Funds supplied for Lazaret at Fao.	
508—1897	Foreign Office	11 ,,	Austro-Hungary	Prohibition against importation (with certain exceptions) from Asia (Asiatic Russia excepted) of rags, tatters, old linen and clothing, old bedding, and bed furniture.	
512—1897	Foreign Office	11 ,,	Turkey (Mesopotamia)	Prohibition against importation of corpses from India.	

QUARANTINE Arrangements in regard to Indian Ports—*continued.*

Register Number.	From.	Date.	Place where Quarantine is Imposed.	Duration of Quarantine.	REMARKS.
521—1897	Foreign Office	11 February	France	Passengers from infected ports enter at four ports, Pauillac, St. Nazaire, Havre, and Dunkirk; 8 days' observation at first two, and 4 days at last two; baggage disinfected.	
524—1897	Foreign Office	12 "	Turkey (Mesopotamia)	Passengers, India and Baluchistan, cannot enter Mesopotamia.	
530—1897	Foreign Office	12 "	Siam (Bangkok)	Ships from Bombay inspected at Paknam, before proceeding to Bangkok.	
533—1897	Foreign Office	12 "	Switzerland	Prohibition against importation in transit of rags, clothing, bedding, body linen (excepting passengers' linen), hides, skins, furs, &c., from British India. Travellers medically examined, and refused admission, if necessary.	
537—1897	Colonial Office	13 "	Cyprus	15 days' quarantine on arrival from India.	
538—1897	Foreign Office	13 "	Baghdad	Increase of quarantine from 10 to 15 days; ships refused altogether.	
540—1897	Foreign Office	13 "	France	Fine from 100 to 3,000 francs imposed on captains, &c., French and foreign vessels, for making false declarations respecting foul ports.	
541—1897	Foreign Office	13 "	Tunis	Ships from India cannot enter; linen, bed linen, old and new, carpets, raw leather and hides, animal offal, boots, &c., from ports of Indian Ocean (including Muscat and Persian Gulf) to be accompanied by a certificate of origin vised by French Consul.	
			Hague	Importation prohibited of rags, used wearing apparel, unwashed body and bed clothes, including passengers' luggage from Bombay and Karachi.	
			Roumania	Pilgrims dissuaded from going to Mecca, on return undergo sanitary inspection. Port of Constanga closed to vessels from India, unless quarantined in Ottoman port, if quarantined at a foreign lazaretto vessels specially inspected. Vessels from plague ports admitted only to Sulina. Old clothes, rags, &c., from plague ports not admitted, passengers' linen disinfected.	
615—1897	Foreign Office	17 "	Burma	Declares all India infected by plague.	
			Turkey	Suspected cases of plague at Burma and Camaran.	
			Germany	Prohibition against importation from India and other places, of personal linen, old and worn clothing, used bedding, rags, carpets, human hair, untanned skins, and hides, unmanufactured hair and bristles, wools, claws, and hoofs, personal effects of passengers exempted; but previous disinfection may be insisted on.	

			Algeria	Plymouth considered as infected, consequent on case of cholera.
			Antwerp	Sanitary precaution. Vessels from healthy ports undergo no sanitary formalities; merchandise generally refused entry, *save salted* green hides cured with arsenic; certain articles admitted after disinfection.
			Dunkirk	Arrivals from India, 4 days' quarantine if no sickness; otherwise 9 days after removal of sick person.
			Persian Gulf	Quarantine imposed; control entrusted to British Residency Surgeon, Bushire.
616—1897	Foreign Office	17 „	Turkey	Statements of Turkish Vice-Consul at Karachi; rules of 1892, concerning skins and animals, and of 1867, respecting cholera enforced.
648—1897	Telegram, India	19 „	Siam	No objection to vessels from Bombay being inspected at Paknam.
655—1897	Foreign Office	19 „	Russia	Bokhara-Afghan frontier closed to trade from India. Pilgrimage to Mecca forbidden.
656—1897	Foreign Office	19 „	Spain	Goods from India to be disinfected.
658—1897	Foreign Office	19 „	Turkey	Temporary Lazaret at Fao; view of Consul-General.
667—1897	Foreign Office	20 „	Spain	Arrivals from Indian ports of Persian Gulf undergo 3 days' observation, and importation of rags, old clothes, tissues, mattresses, peltry, feathers, animal hair, horses, hoofs, wool, silk, linen, hemp, jute, &c., forbidden.
668—1897	Foreign Office	20 „	Antwerp	Rules modified to exclude all textile or similar products, whether animal or vegetable, if not packed in compressed bales and bound with hoops.
685—1897	Foreign Office	22 „	Spain	Restrictions in 667—1897, apply to Indian ports and Arabia.
709—1897	Foreign Office	22 „	Portugal	Lisbon, only open port for landing passengers, luggage, mails, subject to quarantine and disinfection, patterns and postal parcels excluded.
			Roumania	Importation of all animal products from India prohibited.
			Bulgaria	Merchandise from India, Baluchistan, Afghanistan, Persian Gulf, and Hamaran, cannot be imported.
				Ports of Black Sea closed to ships from infected ports, unless previously quarantined in Ottoman Lazaret, if case of illness occurs after leaving quarantine, entry will be refused. Varna and Bourgas only ports for vessels from infected ports previously quarantined in Ottoman ports, a medical examination will be made, and action taken according to the result.
726—1897	Foreign Office	24 „	Turkey	Quarantine against India (including Baluchistan) raised to 15 days, but if plague happens in quarantine at Bussorah, 21 days from last case, option of return. Entry of corpses prohibited whole Persia frontier from Persian Gulf to Russia. Entry of pilgrims and corpses from Baluchistan prohibited.
727—1897	Foreign Office	24 „	France (Marseilles)	Article in the *Temps*, protesting against the measures adopted at Marseilles.
743—1897	Foreign Office	25 „	Egypt	Treatment of "susceptible" goods.

QUARANTINE Arrangements in regard to Indian Ports—*continued.*

Register Number.	From.	Date.	Place where Quarantine is Imposed.	Duration of Quarantine.	REMARKS.
761—1897	Foreign Office	27 February	France	Goods leaving clean Indian ports before 5th February for Great Britain, and reshipped to France, to be considered as arriving from a country free from plague; after that date merchandise treated according to rules in 521—1897.	
765—1897	Foreign Office	1 March	Spain	Prohibition in 667 and 685 applies only to Bombay. Arrivals from other Indian ports three days' observation.	
790—1897	Foreign Office	2 „	Portugal	Rules in 657 apply to Arabian ports.	
801—1897	Foreign Office	3 „	France	Rules prohibiting import of goods apply to ships coming from any port in India contaminated at time of departure.	
804—1897	Foreign Office	4 „	Spain	Passengers from Bombay, fortnight's quarantine, or more if illness on ship.	
809—1897	Foreign Office	4 „	Belgium	Rules regarding arrivals from Persia and parts of China.	
837—1897	Foreign Office	6 „	Russia	Natives of and goods from India not allowed to cross the Turkestan frontier. Natives of India not allowed to enter Bokhara. Muslims in Tauris urged to abstain from going to Mecca.	
838—1897	Foreign Office	6 „	Brazil	Ports of India declared infected; ships directed to proceed to Lazaretto at Ilha Grande.	
839—1897	Foreign Office	6 „	Bulgaria	Rice from Burma not admitted in Bulgarian ports of Black Sea.	
840—1897	Foreign Office	6 „	Turkey	Prohibition against importation from India and Baluchistan of feathers, raw hides, salted and dried furs, felts, hoofs, horns, bones, and all animal products.	
862—1897	Foreign Office	8 „	Turkey	Bussorah. Proposed establishment of a Lazaretto at Adjir.	
863—1897	Foreign Office	8 „	Persia	Complaint of Persia as to insufficiency of quarantine arrangements in Persian Gulf; dangers from absence of quarantine on coast of Yemen.	
865—1897	Foreign Office	8 „	Turkey	Ships from India and Baluchistan cannot pass Dardanelles unless quarantined 15 days in Ottoman or foreign lazaretto.	
881—1897	Foreign Office	9 „	Russia	Tea from India not allowed to enter Batoum.	
893—1897	Foreign Office	10 „	Germany	Shipments from India prior to 12th February allowed to enter (save as regards ports of Bombay and Karachi).	
			Austro-Hungary	Prohibition against importation from India up to Red Sea of raw skins, and hides, bones, horns, hoofs, trotters, bladders, and intestines, hair and bristles.	
904—1897	Colonial Office	11 „	Mauritius	Inquiry respecting coolie emigration from infected districts.	
907—1897	Foreign Office	11 „	Persian Gulf	Proposed lazaret at Adjir, on the Arabian Coast.	
908—1897	Foreign Office	11 „	Antwerp	Modification in list of prohibited articles.	
909—1897	Foreign Office	11 „	France	Later regulations cancelling previous rules, but not making material alterations.	
910—1897	Foreign Office	11 „	Greece	Prohibition to import from countries beyond Straits of Babel Mandeb, postal packets, patterns, hides, wool, bristles, animals and their products, rags, old clothing, &c.	

TELEGRAM from GOVERNOR, BOMBAY, March 14, 1897.

IN continuation of previous telegram of 7th March. Deaths from all causes in Bombay city for the week ended 12th March, 1,274; reported plague deaths, 521. The improvement should be estimated by diminution in deaths from all causes, as the reporting of plague cases and deaths is still not to be regarded as accurate. For the week ended 11th March, 130 dwellings condemned, 109 recommended for alterations, tiles removed from 1,027, floors dug up in 492, and 547 limewashed, 299 vacated, and 3 have been destroyed by fire. The Plague Committee are working systematically and well. I visited Poona last Monday, and since then Executive Committee for plague operations has been appointed. Hospital accommodation has been and is being increased, and systematic search for cases has begun. The opposition and distrust of the people caused great difficulties. In Bandora the diminution has continued; in Coorla there are fewer cases during the week, but more in Bhiwandi and Thana town. In the Thana district generally the number of cases reported last week is less. Cases have appeared in two new villages, but in six villages, where cases occurred in previous week, none are reported for past week. In Surat city the number of cases has diminished. They are confined to one poor quarter. The inhabitants have now left their houses, and gone to live in the fields. Plague is bad in Bulsar and Rander, both Surat district, and local cases have occurred in several villages in the district hitherto reported free. Five local cases have occurred in the railway suburbs of Ahmedabad, and one in the city. In all these places the most stringent measures are taken to stamp out the disease as soon as it appears. Elsewhere in the Presidency proper the only local cases reported during the week ended 12th March were:—In Nasik district, 2 cases, 2 deaths; in Poona district, 1 case, 1 death; in Satara district, 2 cases, 3 deaths; in Kolaba district, 15 cases, 16 deaths; in Ratnagiri district, 17 cases, 5 deaths; in Baroda district, 26 cases, 20 deaths; in Kathiawar district, 12 cases, 4 deaths; in Kolhapur district, 41 cases, 40 deaths; in Cutch, 3 cases, 2 deaths. Precautions are everywhere taken to detect and stamp out the plague, but owing to difficulty of obtaining accurate information in rural districts, the district figures cannot be relied on. Karachi plague deaths for week, 206. Tendency to spread continues, but it is dying out in quarters first attacked, except in the trans-Layari quarter, the "poorest Mohammadan quarter" mentioned in telegram of 21st February, where there is no diminution. The numbers in segregation camps and in hospitals in Karachi continue to increase. Local cases have continued at Sukkur. Some also have occurred at Hyderabad, and slight tendency to spread observable in towns along railway in Sind. Upwards of 500 pilgrims who were collected in Bombay, intending to visit Mecca, were sent to camp of observation near Nasik, upwards of 100 miles from Bombay. They were kept under observation over 10 days. No plague cases occurred. Nearly all have now been despatched to their homes. The arrangements were excellent, and pilgrims gave no trouble. Persons leaving Bombay by sea continue to be examined with greatest care. Every facility for study of plague and scrutiny of our arrangements is given to members of foreign medical missions. Health officer at Aden has been forbidden to board ships in quarantine, so that he may not be compromised and give ground for assertion that Aden might become infected.

In continuation of my telegrams of 7th March and 10th March, number of persons inoculated not precisely known, but not less than 2,790. Only one more inoculated person attacked by plague, and within 12 hours of inoculation. Result of case not determined. Two attacks previously mentioned both recovered. Results of Yersin's treatment not yet stated. I leave for Karachi on Wednesday, and there may be some delay in next week's telegram.

TELEGRAM from SECRETARY of STATE to GOVERNOR, BOMBAY, 13th March 1897.

Plague. Please telegraph approximate number of Europeans attacked and European deaths; also mention European cases separately in weekly telegrams, Eurasians not included.

TELEGRAM from GOVERNOR, BOMBAY, 16th March 1897.

Plague. From beginning of epidemic in Bombay, of Europeans temporarily domiciled twelve attacks, four deaths; of Europeans permanently domiciled seventeen attacks, eight deaths; in Poona two Europeans attacked, no deaths; in Sind no attacks.

INDIA—OUTBREAK OF PLAGUE.

FURTHER PAPERS

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IN

INDIA;

WITH STATEMENT SHOWING THE

QUARANTINE AND OTHER RESTRICTIONS RECENTLY PLACED UPON INDIAN TRADE,

UP TO MAY 1897.

No. II. (*In continuation of* [C.—8386].)

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1897.

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From SECRETARY OF STATE to GOVERNOR, BOMBAY.

18th March 1897.

See last Bombay Vaccination Report. Do your advisers apprehend risk of plague poison affecting animal lymph prepared within plague areas? If so, what precautions are being taken.

From VICEROY.

18th March 1897.

Your telegram of 2nd March. Wool. Government of Bombay report there are no appliances at Bombay or Karachi for sterilisation by steam. Merchants will not procure them, damage to fibre being apprehended. Washing might be arranged outside Karachi, but not except at great distance outside Bombay, places in vicinity being infected. Pressing and baling not possible in vicinity of Bombay and Karachi except within towns. Government of Bombay think that cleaning and packing within infected areas may be prohibited under Epidemic Diseases Act, and export from Bombay and Karachi prohibited of all except wool arriving from non-infected areas in full pressed bales, shipped under passes immediately on arrival. They add that result would not differ much from total prohibition. Chamber of Commerce, Bombay, suggest precautions recommended by Committee of Chamber of Commerce, Karachi. We consider these precautions to be entirely ineffectual. We think that it would be better for the purchasers and manufacturers of wool to decline to receive it from Bombay or Karachi until efficient measures have been devised by local shippers, than for us to issue the orders suggested by Government of Bombay under Epidemic Diseases Act.

From SECRETARY OF STATE to GOVERNOR, BOMBAY.

19th March 1897.

My telegrams of 6th and 9th March. Plague. In future weekly telegrams please mention what measures your Government is taking to extend inoculation and supply lymph in different places affected, besides giving inoculation statistics.

From SECRETARY OF STATE to VICEROY.

19th March 1897.

How long training required in medical schools for female hospital assistants to qualify as practitioners; in what subjects have they to pass examination; and how many have qualified to date?

From GOVERNOR, BOMBAY.

21st March 1897.

In continuation of previous telegram of 14th March. Deaths from all causes in Bombay city for the week ended 19th March, 1,230; reported plague deaths, 488. In Poona, work of search and disinfecting parties begun and proceeding smoothly. Increased numbers taken to hospital and information of attacks given voluntarily with greater freedom. Karachi plague deaths for week, 202. I find opposition to isolation of sick in hospital and segregation almost ended here. In Karachi greatest energy has been shown, but improved organisation needed, and plague committee will be appointed. In addition to cleansing and disinfecting, they include compulsory isolation of sick and segregation of probably infected and destruction of huts and temporary dwellings. Elsewhere in Sind also stringent precautions have been taken for weeks past. Medical inspection of travellers is frequent, and every effort made to prevent unrestricted movement of people, but great difficulty is that people will not protect themselves, and try to conceal and remove cases, often succeeding. The result is that plague is now established in Hyderabad and Sukkur, and suspected in Shikarpur. In all places measures similar to those in Karachi are enforced. Three thousand two hundred and ninety-six persons inoculated with Haffkine's lymph. The attack reported last week resulted fatally. One other case amongst inoculated developed plague symptoms fourth day after inoculation, and recovered. Inoculations have begun in Karachi, Thana, Surat, Ahmedabad, and Poona. Will report later further particulars. This telegram not so full as usual, as I am away from Bombay and cannot therefore forward full detailed information.

From VICEROY.

24th March 1897.

Outbreak of plague has occurred in village Khandraoni, Gwalior State, about 18 miles from Jhansi. Said suspects imported by two Brahmans from Bombay about two months ago. Information first received by magistrate, Jhansi, and reported to us by Government of North-West Provinces on 15th March. Dr. Crofts, presidency surgeon, Gwalior, immediately deputed to village, and arrived on the 18th March. Population of village, 436; 59 seizures and 47 deaths previous to Dr. Croft's arrival. Stringent measures adopted. Village emptied of inhabitants and placed in segregation camps surrounded by sentries; roll call twice daily, when everyone inspected. Four segregation camps formed; first for those in good health, amongst whom no case occurred; second for those in good health amongst whom cases have occurred; third for convalescents; fourth, hospital. Orders issued to villages within a radius of 10 miles, prohibiting from coming to or admitting persons from Khandraoni. Surrounding villages inspected and found free from disease. Houses in which plague has occurred and those in vicinity burnt down. Eleven admitted to hospital on 18th March, one on 19th March, and one on 23rd March. We trust that vigorous measures taken will stamp out this local outbreak and prevent its becoming source of further infection.

From SECRETARY OF STATE to VICEROY.

24th March 1897.

Your telegram of 18th March. Wool. Before publishing your telegram or taking action I suggest that Hankin should experiment and report on behaviour of plague microbe in wool, as he did regarding grain. He should advise as to most effective disinfectant for infected or suspected wool. Immediate action imperative.

From SECRETARY OF STATE to VICEROY.

25th March 1897.

Plague. Your telegram of 21st March. When you send promised supplementary telegram, please refer to following points:—(1.) Inoculation. If total number 3,296, then only 506 inoculations during week since previous telegram. This seems very inadequate, in view of strong presumption that process has some preventive effect. Please adopt measures to accelerate increase, and report progress weekly. (2.) Your telegram gives no information regarding Yersin process. (3.) Nor any separate figures as to Europeans (see my telegram of 13th instant).

From VICEROY.

26th March 1897.

Your telegram of 24th March. Wool. Government of Bombay informed us in February that Hankin was making experiments with wool, but have not reported result. Hankin has recently recovered from mild attack of plague, and we have asked for immediate report, which we will communicate. As stated in our Despatch of 10th March, our advisers considered Hankin's experiments with grain are not conclusive, since loss of pathogenic property may be demonstrated without loss of vitality. Would it be possible to arrange for disinfection at port of arrival, where efficient means of disinfection will exist?

From VICEROY.

28th March 1897.

Our Home Department telegram of 26th March. Government of Bombay report Hankin began experiments on wool and cotton in February, and still proceeding. Result will be communicated as soon as known.

From GOVERNOR, BOMBAY.

29th March 1897.

In continuation of my previous telegram of the 20th March. Deaths from all causes in Bombay city for the week ended 26th March, 1,111; reported plague deaths, 455. For the week ended 18th March, 177 dwellings condemned, 110 recommended for alterations, tiles removed from 1,492, floors dug up in 411, and 3,350 limewashed, 465 vacated, and 163 demolished. Plague Committee working vigorously. In Poona also Plague Committee working vigorously. House-to-house visitation frequent and systematic. Whole town run through once in five days, but still many cases escape detection, and the total deaths are somewhat more than last week. In the Thana and Surat districts the number of cases reported has considerably increased. During past month no local cases have been reported from Ahmednagar district. During past fortnight no fresh local cases are reported from Nasik district, and only one from Satara district, and during past week no fresh local cases from Ahmedabad. Elsewhere the figures are:—For the week ended 19th March, Ratnagiri district, 29 cases, 31 deaths; Kolaba district, 18 cases, 7 deaths; Poona district, 6 cases, 5 deaths; Kathiawar district, 12 cases, 10 deaths; Kolhapur district, 7 cases, 3 deaths; Cutch district, 4 cases, 14 deaths; Baroda district, 31 cases, 23 deaths. For the week ended 26th March, Ratnagiri district, 1 death; Kolaba district, 29 cases, 25 deaths; Poona district, 1 case, 1 death; Kathiawar district, 11 cases, 5 deaths; Kolhapur district, 5 cases, 2 deaths; Cutch district, 3 cases, 3 deaths; Baroda district, 52 cases, 55 deaths. Local cases have also occurred at Palanpur. Your telegram of 25th March. (1.) The inoculation figures referred to Bombay city only. Organisation for training officers proceeding. Inoculation necessarily voluntary, and at present it cannot be said to have passed out of experimental stage. Preparation Haffkine's lymph entrusted to a doctor in order to relieve Haffkine, who visited Poona and inoculated 349 persons there in two days. In Bombay city during past week 477 persons inoculated. Inoculations outside Bombay are:—Karachi, 187; Ahmedabad, 1; Broach, 6; Surat, 101; Thana, 46; Bandora, 80; elsewhere, Thana district, 45; Sholapur, 2. (2.) Am obtaining information regarding Yersin. (3.) Europeans. Since my telegram of 16th March, 5 cases, 2 deaths, in Bombay city; 1 case, no death, Ahmedabad, imported; 1 case, no death, Poona. Karachi plague deaths for week ended 26th March, 185; for week ended 19th March, 198, not 202. In Hyderabad the plague is worse, and in Sukkur considerably worse.

From SECRETARY OF STATE to VICEROY.

29th March 1897.

Please send by post to Medical Officer, Local Government Board, London, such quantity as can be conveniently spared of Haffkine's serum; also be prepared, if further cases of plague reported on board "Dilwara" on arrival in England, to send expert at once with supply of serum to inoculate all on board. Please consider whether special facilities for inoculation should not be given to all embarking for Europe from Bombay.

From SECRETARY OF STATE to VICEROY.

1st April 1897.

Plague. Further information regarding Yersin's results awaited here with interest. Is it true that, as stated in "Times of India," he has only enough serum for 300 inoculations? If so, can he procure more in Bombay?

From VICEROY.

2nd April 1897.

Your telegram of 10th March. Indian Tea Association urge that prohibition of importation of Indian tea Batoum may have far-reaching effect on welfare of Indian tea industry, and ask us to take steps for removal of prohibition. Indian tea not grown or manufactured in or near plague infected areas, and that transhipped overland or from Calcutta is not carried through or near them. Indian tea shipped from Bombay is carried there in chests, and is not at all dangerous article. We trust that, as result of Venice Conference, prohibition will be removed.

From GOVERNOR, BOMBAY.

2nd April 1897.

Your telegram of 1st April. Yersin reports details of 50 plague cases treated with his curative serum, as follows:—17 treated first day of attack, 15 recoveries, 2 deaths; 17 treated second day, 11 recoveries, 6 deaths; 12 treated third day, 6 recoveries, 6 deaths; 3 treated fourth day, 1 recovery, 2 deaths; 1 treated fifth day, died. Yersin says serum was hastily prepared, and less active than serum used last year in China; larger doses were injected. Present supply of Yersin's serum exhausted; no more procurable at Bombay; more is on its way from Pasteur Institute, Paris, in whose "Transactions" details will be made public by Yersin.

From SECRETARY OF STATE to VICEROY.

3rd April 1897.

Your telegram of 26th March. Local Government Board* advise that there is not evidence to show that bales of wool from plague ports bring risk to England. Even if bacillus be found to retain vitality in wool purposely inoculated, that would not be proof that wool would in ordinary trade convey infection. If, however, you see reason to think wool from plague ports would be infective, remedial action, whether disinfection or prohibition, must be taken in India, and cannot be taken in England. If you decide on any such action, distinction might be drawn between wool packed at plague ports and wool baled up country.

From GOVERNOR, BOMBAY.

6th April 1897.

In continuation of previous telegram of 29th March. Deaths from all causes in Bombay city for the week ended 2nd April, 1,099; reported plague deaths, 481. For the week ended 25th March, 310 dwellings condemned, 138 for alterations, 1,028 untiled, 401 dug, 1,210 lime-washed, 299 vacated, 49 demolished. For the week ended 1st April, 83 condemned, 88 for alterations, 440 untiled, 284 dug, 688 lime-washed, 82 vacated. I have visited Poona again; they have a good organisation working very well, and death-rate decreasing. I also stopped at Kalyan, where a most careful examination of railway passengers is carried out; visited all the sheds. It was reported that 50 per cent. of the patients had recovered. During past week, one European plague case in Bombay city, one death mofussil. At Karachi during the week ended 2nd April, 189 plague deaths; marked decrease, Trans-Lyari, but marked increase in Keamari and one quarter of town, and a few cases in and about cantonment limits. Systematic house-to-house visitation in progress, and general preventive measures increasing in stringency. Examination of arrivals at Karachi, and disinfection of their clothing in progress. At Sukkur plague is established; 103 cases, 58 deaths during week; Plague Committee formed; special civil and military officers sent, and 30 English soldiers being sent. At Hyderabad practically no change. I will send further information later.

From GOVERNOR, BOMBAY.

7th April 1897.

In continuation of previous telegram of 6th April.

No local cases in Ahmednagar and Nasik districts, 5 cases, 5 deaths, Satara district; 1 case, 1 death, railway suburb of Ahmedabad. In Surat City 2 fresh local cases; part of city was searched during week, no unreported cases found. In whole district 219 cases, 187 deaths; two places chiefly affected, Bulsar and Mugod, where plague continues virulent. In Bulsar 100 sepoys under European officer are working. In Thana district 380 cases, 337 deaths. In Kolaba district 71 cases, 49 deaths; here plague shows marked sign of increase. Elsewhere, Ratnagiri district, 4 cases, 2 deaths; Poona district, 1 case, 1 death; Kathiawar, 13 cases, 12 deaths; Kolhapur territory, 2 deaths; Cutch territory, 10 cases, 8 deaths; Baroda territory, 23 cases, 22 deaths; Palanpur territory, 35 cases, 18 deaths. Figures for districts do not include imported cases, which still are found in many parts parts of Presidency. Haffkine's inoculations in Bombay up to 2nd April 4,764, Poona up to 30th March 487, Bulsar 273, Karachi 187, Surat 70, Thana district 171, Kolaba district 180.

From VICEROY.

8th April 1897.

Your telegram of 19th March. Training of female hospital assistants. Course varies; four years in Madras, Bengal, North-West Provinces, and Punjab, three in Bombay. Course everywhere includes medicine, surgery, obstetrics, materia medica, anatomy, and clinical instructions. Additional subjects are :—Hygiene, Madras, Bengal, North-West Provinces; jurisprudence, Madras, Bombay, Bengal, North-West Provinces; pharmacy, Madras, Punjab; chemistry, Bombay, Bengal; physiology, Bombay, Bengal; pathology, Bengal. Number qualified up to date:—7 Madras, 17 Bombay, 46 Bengal, 62 North-West Provinces, 13 Punjab.

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* *See* page 72 of present papers.

From GOVERNOR, Bombay.

10th April 1897.

In continuation of previous telegram of 7th April.

Deaths from all causes in Bombay city for the week ended 9th April, 983; reported plague deaths, 368. For the week ended 1st April, 88 dwellings condemned, 42 for alterations, 385 untiled, 245 dug up, 321 lime-washed, 109 vacated, 64 demolished. Usual further information will follow.

From GOVERNOR, Bombay.

13th April 1897.

In continuation of previous telegram of 10th April.

In Poona city results are interesting. I give below reported plague deaths and deaths from all causes :—For the week ended 12th March 160 and 434, 19th March 144 and 328, 26th March 205 and 361, 2nd April 177 and 297, 9th April 149 and 219; normal weekly number deaths from 60 to 70. Excess of difference between figures given over the normal number deaths shows approximate number of plague deaths which escape detection as such. Work began in Poona, 13th March, with 20 search parties, which were increased to 60 on 22nd March. Result of work done in diminishing both total mortality and number of plague deaths escaping detection appears very satisfactory. In Poona there is thorough disinfection and limewashing of houses in which a plague case is found, and segregation of the inhabitants of such houses. No Mohammadan riots have taken place. During past week one plague case amongst Europeans, no death. Total number inoculated by Haffkine's process in Bombay up to 9th April 5,733, Poona 779, Bulsar 312, Damaun 844, Karachi 241, Kolaba 251; elsewhere less than 100 each place. Fresh supply Yersin's serum expected immediately. Haffkine is working at his curative serum. In the mofussil districts the figures are :—Surat district, 310 cases, 220 deaths; Thana district, 369 cases, 323 deaths; Satara district, 1 case, 1 death; Ratnagiri district, 6 cases, 3 deaths; Kolaba district, 176 cases, 155 deaths; Poona district, 1 case, no death; Ahmedabad city, 1 case, 1 death; Kathiawar, 15 cases, 13 deaths; Cutch, 18 cases, 12 deaths; Baroda, 51 cases, 39 deaths; Palanpur, 23 cases, 19 deaths; Karachi city, for the week ended 9th April, 161 deaths. Search parties are at work; disinfection of clothing and bedding of all suspicious arrivals at Karachi is enforced. In Hyderabad and Sukkur number of plague deaths increased. Two-thirds of Sukkur is described as deserted, and three-fourths of population said to have left. No signs yet that Rohri or Shikarpur is infected.

From GOVERNOR, Bombay

17th April 1897.

In continuation of previous telegrams about plague.

Deaths from all causes in Bombay City for week ending 16th April, 934; reported plague deaths 363. In Poona City corrected figures are ;—For week ending 9th April reported plague deaths 151, deaths from all causes 232; for week ending 16th April 117 and 169. Numbers inoculated with Haffkine's lymph up to 16th April are :—Bombay City, 6,541; Poona, 939; Broach, 78. Total in mofussil, 2,482. Present difficulty is insufficiency of lymph, but its production is being extended. We are trying to arrive at some trustworthy conclusion regarding efficacy of Haffkine's inoculation and Yersin's treatment. Haffkine is working at production of curative serum.

From GOVERNOR, BOMBAY.

18th April 1897.

In continuation of previous telegrams about plague.

For week ending 16th April:—Surat district, 259 cases, 196 deaths; Thana district, 303 cases, 233 deaths; Ratnagiri district, 14 cases, 10 deaths; Kolaba district, 146 cases, 146 deaths; Poona district, no case, 1 death; Ahmedabad city, 1 case, 1 death; Nasik district, 2 cases, 2 deaths; Kathiawar, 18 cases, 13 deaths; Kolhapur, 2 cases, 1 death; Cutch, 25 cases, 10 deaths; Baroda, 55 cases, 45 deaths; Palanpur, 21 cases, 16 deaths. In Surat City, 6 cases, 5 deaths reported, 1 case found concealed; fewer cases reported from Bulsar, but more from Mugod. In Karachi for week ending 16th April reported plague deaths 123; in Hyderabad for week ending 2nd April 23, 9th April 58, 16th April 104. In Sukkur no increase during week. No cases or deaths amongst Europeans during week.

From SECRETARY OF STATE to VICEROY.

22nd April 1897.

Plague. Belgium Government are anxious to modify regulations; desire to know what ports and localities in British India are infected. Please telegraph reply.

From GOVERNOR, BOMBAY.

25th April 1897.

In continuation of previous telegram about plague. Deaths from all causes in Bombay City for week ended 23rd April, 745; reported plague deaths, 262. Great danger now is of re-infection from outside. All arrivals by sea and road, and most by rail, are carefully examined. I do not think it necessary any longer to send details of houses dealt with. Amongst Europeans, one case, no death. During past week in Bombay, 552; Poona, 241; Damaun, 505 inoculations by Haffkine's method; elsewhere also, but fewer. Most, if not all, medical officers in Bombay and Poona acquainted with technique of inoculation; many doctors elsewhere also similarly acquainted, and number increasing. Two or three weeks must elapse before lymph can be produced on a large scale. Then the only difficulty will be unwillingness of people to be inoculated. Poona City, for week ended 23rd April, reported plague deaths, 74; deaths from all causes, 111. Smallness of difference necessitates caution in accepting figures. Special arrangements being made to ensure correct record of deaths, but no doubt whatever plague is steadily and quickly subsiding in Poona. The mofussil reports show for week ended 23rd April:—Surat district, 117 cases, 117 deaths; Thana district, 235 cases, 188 deaths; Ratnagiri district, 5 cases, 3 deaths; Kolaba district, 153 cases, 150 deaths; Poona district, 3 cases, 3 deaths; Kathiawar, 3 cases, 1 death; Kolhapur, 14 cases, 9 deaths; Cutch, 228 cases, 176 deaths; Baroda, 43 cases, 34 deaths; Palanpur, 8 cases, 6 deaths; no cases Satara, Ahmedabad, and Nasik. Surat City, 3 cases, 3 deaths; reported that no signs apparent of plague becoming established there. Plague greatly diminished Bulsar and Mugod, but continues endemic at Rander, suburb of Surat. In Thana district progress is encouraging, and whole district well under control. Kolaba district gives anxiety; plague appears to be gaining there, and in Cutch also. Special measures are being considered to prevent re-infection of Bombay therefrom. Karachi city, for week ended 23rd April, plague deaths, 120. Reduction Trans-Lyari steadily continues. The tendency to spread in quarters of Karachi, hitherto not seriously affected, not yet overcome. Hyderabad City, 69 plague deaths. Sukkur, for week ended 23rd April, 37 plague deaths; 16th April, 60; 9th April, 75. No case reported from Shikarpur. Local cases reported from Rohri and from some other places in Sind.

From GOVERNOR, BOMBAY.

1st May 1897.

In continuation of previous telegram about plague.

Deaths from all causes in Bombay City for week ended 30th April, 683; reported plague deaths, 169. The population is returning continuously, and is now variously estimated at from 600,000 to 700,000. All persons coming into Bombay are now medically examined. In Poona City, deaths from all causes during the week ended 30th April, 78; reported plague deaths, 45. Further inquiry confirms correctness of figures. Satisfactory result of Poona City operations shown by return of plague cases. They were, for week ended 26th March, 319; 2nd April, 238; 9th April, 235; 16th April, 159; 23rd April, 94; 30th April, 60.

From VICEROY.

1st May 1897.

Your telegram of 22nd April. The whole of Bombay Presidency and Sind, except extreme east of the latter, may be considered infected. No other part of India infected, but eight local cases have occurred at Hardwar, 1,000 miles from coast. No ports trading with Europe in Bombay Presidency and Sind uninfected, and none in Madras Presidency, Bengal Presidency, or Burma are infected.

From VICEROY.

3rd May 1897.

Eight local cases of plague detected at Hardwar, Saharunpur district. Fair there in April is attended by pilgrims from Sind, and special arrangements were made to prevent infection. No cases occurred among pilgrims from infected areas in Bombay and Sind. Cases detected were discovered between 8th and 22nd April among local residents, and seven of them in one quarter of town. In two cases, attack appears to have dated from some time back. Infected quarter evacuated, and inhabitants placed under observation, temporary structures and mud huts being burnt and masonry buildings thoroughly disinfected. As no case reported since 22nd April, we trust that measures taken may prove effective in stamping out disease.

From GOVERNOR, BOMBAY.

4th May 1897.

In continuation of previous telegram about plague.

For the week ended 30th April, local cases:—Surat district, 78 cases, 55 deaths; Thana district, 212 cases, 152 deaths; Ratnagiri district, 17 cases, 17 deaths; Kolaba district, 84 cases, 77 deaths; Poona district, 3 cases, 3 deaths; Ahmedabad City, 1 case, no death; Kathiawar, 15 cases, 8 deaths; Cutch, 325 cases, 275 deaths; Kolhapur, 3 cases, 3 deaths; Baroda, 32 cases, 21 deaths; Palanpur, 2 cases, 2 deaths. Europeans, 1 case, no death, during week. Local plague deaths for week ended 30th April:—Karachi 81, Hyderabad 40, Sukkur 16 deaths (correct number last week 50, not 34). A few local cases at Tatta and Kotri and Rohri and elsewhere; none at Shikarpur. The serum received by Yersin from Paris declared by him to be ineffective. Total number inoculated by Haffkine's process:—Bombay 7,344, Poona 1,249, Damaun 1,375, Bulsar 398, Broach 84, Karachi 288, Thana district 234, elsewhere 104.

From VICEROY.

4th May 1897.

Your telegram of 3rd April. As regards danger of infection of plague from wool imported from Bombay and Karachi, I have been again in communication with Government of Bombay; and Government of Bombay and Chambers of Commerce, Bombay and Karachi, have been unable to devise means for keeping wool free from risk of infection. I am advised by our expert advisers, including Cleghorn, that wool is suitable medium for conveyance of plague bacillus; it has been placed by Venice Conference in list of susceptible articles which country of import is at liberty to prohibit or admit. It would, in our opinion, introduce novel and very inconvenient precedent for us to adopt measures which would have effect of prohibiting export, and we consider, if English authorities are of opinion that import of wool is dangerous, the proper course is to adopt measures in England to prevent import.* It could probably be arranged that any wool baled in uninfected area could be shipped with certificate to that effect.

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* *See* page 72 of present papers.

From GOVERNOR, BOMBAY.

10th May 1897.

In continuation of previous telegram about plague.

Deaths from all causes in Bombay City for week ended 7th May, 610; reported plague deaths, 130. Poona City, for week ended 7th May, deaths from all causes, 51; reported plague deaths, 31; fresh plague cases, 20. Total inoculations :—Bombay 7,569, elsewhere 3,793. Local cases for week ended 7th May :—Surat district, 50 cases, 45 deaths : Thana district, 179 cases, 159 deaths ; Ratnagiri district, 1 case, 2 deaths; Kolaba district, 279 cases, 217 deaths; Poona district, 2 cases, 1 death; Ahmedabad City, 3 cases, 3 deaths; Kathiawar, 27 cases, 17 deaths; Cutch, 1,288 cases, 1,168 deaths; Kolhapur, 5 cases, 3 deaths; Baroda, 61 cases, 51 deaths. Plague ceased to be epidemic in all the villages in the Thana and Surat districts except a few. It is severe in six villages of Kolaba district, and terribly severe in Cutch Mandvie, to which place medical officers, nurses, and workers have been sent from Bombay. For week ended 7th May, Karachi City plague deaths 64, Hyderabad 32, Sukkur 8, Rohri 18.

From GOVERNOR, BOMBAY.

16th May, 1897.

In continuation of previous telegram about plague.

Deaths from all causes in Bombay city for week ended 14th May, 543; reported plague deaths, 81. Poona city, for week ended 14th May, deaths from all causes, 31; reported plague deaths, 13; fresh attacks, 13. Total of Haffkine's inoculations :—Bombay, 7,775; elsewhere, 4,184. Local cases for week ended 14th May :—Surat district, 26 cases, 21 deaths; Thana district, 61 cases, 54 deaths; Kolaba district, 113 cases, 94 deaths; Kathiawar, 11 cases, 10 deaths; Cutch, 840 cases, 811 deaths; Kolhapur, 2 cases, 3 deaths; no cases Ratnagiri, Poona, and Ahmedabad districts or Ahmedabad city during week. Two attacks one death amongst English people. Arrangements being made for plague hospitals and observation places suitable for the rainy season. During week, plague deaths:—Karachi, 44; Hyderabad, 11; Sukkur, 5; Rohri, 18.

From SECRETARY OF STATE to GOVERNOR, BOMBAY.

20th May 1897.

Plague. Have there been any deaths among nurses sent from England? If so, please telegraph names.

From GOVERNOR, BOMBAY.

23rd May 1897.

Your telegram about plague. No death occurred among nurses sent from England.

From GOVERNOR, BOMBAY.

23rd May 1897.

In continuation of previous telegram about plague.

This week's report very satisfactory. Deaths from all causes in Bombay city for week ended 21st May, 513; reported plague deaths, 55. Poona city, for week ended 21st May, deaths from all causes, 40; reported plague deaths, 10; plague cases, 15. Search parties withdrawn from 19th May. Weekly mortality normal or below it for past three weeks. Local cases for week ended 21st May :—Surat district, 31 cases, 20 deaths; Thana district, 65 cases, 43 deaths; Ratnagiri district, 7 cases, 6 deaths; Kolaba district, 60 cases, 38 deaths; Poona district, 2 cases, no death; Kathiawar, 1 case, 2 deaths; Cutch, 598 cases, 504 deaths; Kolhapur, 3 cases, 2 deaths; Baroda, 21 cases, 20 deaths; Janjiri, 41 cases, 30 deaths (Janjira previously, 168 cases, 102 deaths). During week, plague deaths :—Karachi 23, Hyderabad, 10; Sukkur, 3; Rohri, 4.

From the GOVERNMENT OF INDIA to the SECRETARY OF STATE FOR INDIA.

(Sanitary No. 7.)

MY LORD, Calcutta, February 24, 1897.

IN continuation of our Despatch No. 5 (Sanitary), dated the 10th instant, we have the honour to furnish your Lordship with a further report on the subject of the plague.

2. The course of the plague has shown no great variation since the date of our last Despatch. In Bombay we regret to say that the daily number of seizures and deaths shows some further increase. The disease is now most prevalent in scattered villages in the north of the island of Bombay, and the suburbs of Kurla and Bandora have suffered badly. From the beginning of February up to the 8th of the month, the average number of seizures and deaths reported daily were 104 and 101 respectively; during the following week they rose to 123 and 120, and during the week ending the 22nd February they fell again to 115 and 117 respectively. The mortality return for the week ending the 2nd February showed an average mortality from all causes of 232 a day; during the week ending the 9th the number rose to 270, and during the week ending the 16th it fell again to 244. In Karachi there is a slight tendency for the plague to spread, but it is diminishing in the quarter where it was formerly worst except among the poorest Muhammadans, which is the class most affected. During the period 1st to 8th February the number of seizures and deaths from plague averaged 45 and 42 respectively a day; during the week ending the 15th the numbers fell to 37 and 34, and during the week ending the 22nd they have been 39 and 31. Some check appears to have been placed on the progress of the disease by the removal of the inhabitants from infected houses and neighbourhoods to segregation camps. The Bombay Government have reported that about 2,600 persons have entered the Hindu camp, and 600 the Muhammadan camp. 35 deaths were reported from camp up to the 3rd February, and 10 since that date, none of them later than the 16th. Three fresh cases in the camp were reported on the 23rd. There were 37 new arrivals on the 21st and 22nd. In the Thana district there have now been in all 1,187 seizures and in Poona 530. The returns show no increase in the latter place; one indigenous case is reported to have occurred in cantonments. Occasional cases said to be indigenous have been reported in the Bombay Presidency, and six such cases have been discovered in Sind (five of them occurred three weeks ago), but there seems at present to be no indication of the further spread of the disease. The disease has not become endemic in any other place. The great majority reported outside Bombay, Karachi, Poona, and the Thana district have occurred among immigrants from the infected places into other parts of the Bombay Presidency and Baroda. In Ahmedabad there was a slight outbreak in an isolated quarter, which the Bombay Government believe to have been suppressed.

3. Local Governments and Administrations have issued regulations under the Epidemic Diseases Act, for the inspection of passengers by rail, and the isolation and treatment of cases of plague discovered on the railway, for cleaning and otherwise protecting towns against the malady, for guarding against the introduction of infection into urban and rural areas, and for the protection of commerce. Copies of the regulations issued by the Governments of Bombay, Madras, the North-Western Provinces and Oudh, the Punjab and Bengal, and by the Chief Commissioner of the Central Provinces and the Agent to the Governor-General, Rajputana, are appended* to this Despatch. Each Local Government has been asked to forward copies of its regulations to all other Governments and Administrations in order that the experience of one Province may be utilised in other places.

The regulations regarding the treatment of passengers by railway legalise the procedure for inspection, &c., which is described in our previous Despatches and their enclosures. The regulations of the Government of the North-Western Provinces and Oudh give details of the arrangement in that Province. A number of commissioned medical officers and assistant surgeons have been supplied to the Local Governments and Administrations for carrying out the work.

The municipal regulations of Madras, Bombay, Bengal, and the North-Western Provinces and Oudh are deserving of special notice, and also the regulations made by the Government of the North-Western Provinces and Oudh for the detection of cases in villages and the prevention of the spread of infection. Amongst other matters the municipal regulations provide for the summary abatement of overcrowding and the evacuation and cleaning of infected houses. It has been suggested to the Local Governments and Administrations that in order to enable a watch to be kept on passengers arriving from the infected areas all station masters should be provided with a list of infected places, and that ticket collectors should be required to stop all passengers presenting tickets from an infected station. Such passengers would be required to give their names and addresses and such further particulars as would enable the necessary watch to be kept over their movements by the local authorities.

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* Not reprinted.

The Governments of Bombay and Bengal have issued regulations for the protection of commerce. The Bombay Regulations reproduce the rules described in paragraph 6 of our Despatch of the 10th February. The Bengal Regulations prescribe medical inspection of all vessels sailing from the Port of Calcutta, and require that they shall not sail without a clean bill of health. They also provide for the removal from the vessel of persons found to be suffering from plague, and for the detention in quarantine of any vessel that may be infected.

4. A Notification has also been issued under the powers conferred on the Governor-General in Council by the Epidemic Diseases Act, in supersession and extension of a notification previously issued under the Sea Customs Act, prohibiting the sea-borne trade in articles likely to spread infection. The Notification prohibits the import from infected ports into any other ports in British India of rags, used apparel and bedding, waste paper and used gunny bags. The Native States of Cochin, Travancore, and Kathiawar, have been requested to issue similar rules with respect to the ports in their territories. Correspondence with the Governor of Ceylon is appended* to this Despatch, showing that similar precautions have been taken by the Colonial Government. The rules were issued under the powers conferred on the Governor-General in Council, instead of the matter being left to the Local Governments, as we consider it desirable that restrictions of commerce should be considered in detail by the Government of India, and that the restrictions imposed should be in all cases uniform.

5. The authorities at Aden having represented that, owing to the shortness of the voyage from Bombay, the quarantine rules against that port, issued in the Notification of the Government of India, No. 300 (Sanitary), dated the 12th October 1896, were insufficient to provide for the safety of the station, orders have issued under the Quarantine Act, I. of 1870, requiring all persons landing at Aden to be placed in quarantine for a period lasting up to 10 days from the date of departure of the vessel. Orders have also issued modifying Rule III. of the same quarantine rules so as to require the crew and passengers of all vessels arriving at Aden by day or night to be medically examined by the Health Officer of the port. In order to facilitate this work and to prevent vessels being delayed, the Government of Bombay have been asked to depute an officer of the Indian Medical Service to assist the Port Surgeon at Aden.

The Government of Madras have, with the previous sanction of the Governor-General in Council, imposed quarantine against Bombay, Karachi, and Goa, at the ports of the South Canara and Malabar districts, and against Goa at the Port of Tuticorin. Several cases of plague had, as was stated in our telegram No. 290, dated 2nd February 1897, been reported from Goa, but the Portuguese authorities now report that these were all among immigrants, and that they were promptly isolated and placed in quarantine.

6. In paragraph 8 of our Despatch of the 5th February, we alluded to the suggestion made to the Government of Bombay on Surgeon-Major-General Cleghorn's advice for the removal of persons from infected houses in Bombay to health camps in the open. Appended to this Despatch is a copy of further correspondence with the Government of Bombay on the subject. That Government have expressed the opinion that it is not practicable to carry out this suggestion on a large scale. We were disappointed at the view taken by the Local Government, as it appears to us that the suggestion is the only practicable one that has been made for attacking the root of the evil, and in Karachi it appears to have met with some measure of success. Your Lordship will see from our telegram No. 664, dated the 21st February 1897,† that we do not consider that the scheme is so difficult of execution as the Government of Bombay apprehend, and that we have strongly urged that the experiment should be made, and that healthy accommodation should be prepared for the inhabitants of the quarters worst affected. We have no doubt that the Government of Bombay will earnestly endeavour to carry

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* Not reprinted.

† *See* page 17.

out our wishes, and we will inform your Lordship of the result in due course. A copy of a further telegram from the Government of Bombay, dated the 23rd instant, on the same subject is enclosed.

7. In paragraph 8 of our Despatch No. 1, dated the 27th January 1897, it was stated that M. Haffkine, the eminent bacteriologist, who had been deputed to Bombay, was engaged on the preparation of a serum for protective and therapeutic purposes, and that he had discovered a culture of the plague bacillus, inoculation by means of which would, he hoped, increase the resistance of man against the disease. To this Despatch are appended two letters from M. Haffkine in which he describes the result of his prophylactic and curative treatment during an outbreak of the plague in the gaol at Bombay. M. Haffkine regards the result of his experiments as hopeful, and the figures in his reports appear to justify him in taking this view. But at the present there are not sufficient data to allow a decided opinion to be formed. Information has been received from the French Consulate that Dr. Yersin sailed from Annam for India on the 21st of this month.

8. In conclusion we desire to advert to the subject of the pilgrimage to the Hedjaz and its suspension during the present season, which we have discussed in telegraphic correspondence with your Lordship.

On receipt of your Lordship's telegram of the 18th instant, stating that in view of the feeling in Calcutta and Madras, and in consequence of the strong opinions of all European Governments regarding the danger of plague being communicated to Europe, Her Majesty's Government had decided that the pilgrimage should be altogether stopped for the present, we issued a notification under the Epidemic Diseases Act, declaring the pilgrimage to the Hedjaz altogether suspended for the current season. We have requested Local Governments and Administrations to give the widest publicity to this decision, and in communicating it to them we impressed upon them the necessity of explaining to intending pilgrims and to all Muhammadans the reasons that had led to the decision of Her Majesty's Government, and desired them to utilize the agency of all Muhammadans of trust and position in doing this. We have also urged on them the importance of stopping intending pilgrims near their homes and on the borders of India so as to prevent their congregating in large numbers, and generally of making the decision as little unpalatable as possible to the Muhammadan population. A copy of the notification under the Epidemic Diseases Act and of the orders to the Local Governments and Administrations is appended* to this Despatch. Arrangements have also been made to prevent persons who had, before they became aware that pilgrim-ships could no longer proceed from Bombay or Karachi, entered the Bombay Presidency with the intention of proceeding on the pilgrimage from disseminating infection on returning to their homes. They have all been taken to a camp at Nasik where they will be kept under observation for 10 days, or, if any case of plague occurs at the camp, until 10 days after the last case. Before leaving the camp, they and their effects will be properly disinfected. The pilgrims belonging to each Province will then be taken to a fixed place in that Province by an official of the Government of Bombay, there they will be handed over to an official of the Local Government, who will cause them to be conveyed to their homes. The State will bear the expense of the return journey.

We have, &c.
(Signed) ELGIN,
&c. &c.

Enclosures.

TELEGRAM No. 388, dated Calcutta, 9th February 1897.

From the Secretary to the Government of India, Home Department, to the Secretary to the Government of Bombay, General Department.

My letter No. 45 of 19th January last regarding measures suggested by Dr. Cleghorn for suppression of plague in Bombay. Daily returns unfortunately show that disease shows no signs of abating and returns of deaths are now worse than ever. In view of gravity of situation Government of India are constrained to press on Government of

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* Not reprinted.

Bombay the need for vigorous and immediate action, and will be glad to learn what measures have been taken in pursuance of suggestions made by Government of India. They will be obliged if a reply can be sent to this telegram urgently.

TELEGRAM No. 227–P., dated Bombay, 10th February 1897.

From the Secretary to the Government of Bombay, General Department, to the Secretary to the Government of India, Home Department.

Your telegram 388 of yesterday. Of the suggestions in your letter 45, evacuation of all infected houses and removal of people to temporary dwellings deemed impracticable if on large scale and carried out by force. All that is practicable being done by persuasion. Vigorous action being taken under section 426 of Municipal Act for demolition of insanitary huts. Some already destroyed, more about to be. Further measures of the most drastic kind will be taken under regulations drafted under Act III., 1897, and submitted to law officer before publication. Those regulations will provide for evacuation of infected houses, entry into deserted houses, for cleaning, &c., prohibition of further use of evacuated and deserted houses, summary reduction in overcrowding and closing of houses unfit for habitation. At present house-to-house visitation conducted vigorously in order to ascertain cases of plague, mark houses needing cleansing, &c., and such as are unfit for habitation. Paragraph 4 of your letter 45. Memorandum not published, because ascertained several signatories did not intend compulsory segregation of healthy, and publication would publicly misrepresent their real views regarding building regulations. Government do not doubt they need strengthening and are making provision to strengthen them, both temporarily by regulations under Epidemic Diseases Act, and hereafter permanently by amending Bombay Act III. of 1888. Paragraph 5. One Deputy Sanitary Commissioner in Bombay, one in Thana district, one in Karachi, only two left for ordinary and famine work and to aid in repressing extension of plague to Mofussil. Four doctors who were through plague in Hong Kong are coming out; two extra commissioned medical officers are already assisting health officer, another assisting at European hospital, another assisting port health officer; others will be employed as they arrive.

TELEGRAM No. 459, dated Calcutta, 12th February 1897.

From the Secretary to the Government of India, Home Department, to the Secretary to the Government of Bombay, General Department.

Your telegram 227, dated 10th. Government of India have learnt with regret view of Bombay Government on evacuation of all infected houses and removal of people to temporary dwellings. Situation is so grave and importance of vigorous action so manifest that they would desire Bombay Government to reconsider decision that evacuation of houses and removal to temporary dwellings on a large scale is impracticable. Experience now shows that outbreak will not be got under unless strongest measures are taken, and every day's postponement renders success less easy. The other measures which Bombay Government are taking will be of much use, but are not calculated to take the place of removal from infected houses to healthy locality. This course appears to Government of India to be only course left which gives prospect of getting plague under subjection. Bengal Government have published following rule for compulsory evacuation infected premises under Epidemic Diseases Act:—*Begins.*—When a case of plague occurs in any premises, the chairman may, after giving reasonable notice, summarily cause such premises to be vacated, and thoroughly cleansed and disinfected in such manner as may appear to him necessary, and may cause all articles which, in the opinion of the Health Officer, cannot be properly disinfected, to be destroyed. He may also, in consultation with the engineer of the Corporation, cause to be removed all partitions, erections, or portions of house walls which impede or obstruct ventilation. The premises shall not be reoccupied without the written permission of the chairman. The chairman shall provide the inmates thereof, when necessary, with temporary accommodation.—*Ends.* In order to carry out scheme first necessity is provision of sufficient temporary accommodation in healthy locality, and Government of India would be glad to learn what steps have been taken to provide this accommodation. It appears to them that experience at Karachi tends to show that if well regulated temporary accommodation is provided and executive and municipal authorities endeavour strenuously to carry out scheme on large scale, population will not be very difficult of persuasion.

Telegram No. 292–P., dated Bombay, 13th February 1897.

From the Secretary to the Government of Bombay, General Department, to the Secretary to the Government of India, Home Department.

Your telegram 459, 12th. Please see paragraph 9 of my letter 263–P. and Notification 228–P., 10th, in Government Gazette Extraordinary of same date, page 200 B.

No. 263–P., dated Bombay Castle, 12th February 1897.

From J. DeC. Atkins, Esq., I.C.S., Secretary to the Government of Bombay, General Department, to the Secretary to the Government of India, Home Department.

I am directed to acknowledge the receipt of your letter, No. 45, dated 19th ultimo, forwarding a memorandum signed by certain medical practitioners in the City of Bombay and offering certain suggestions for the consideration of the Government of Bombay. I am to say that the suggestions have been carefully considered by his Excellency the Governor in Council, who directs me to make the following observations in reply to your letter.

2. In the first place I am to say that his Excellency the Governor in Council has some hesitation in complying with the request that the memorandum should be made public, as it has been ascertained that many of the medical practitioners who signed it did so on the distinct understanding that the removal of the inmates from those houses in which cases of plague occur was not to be effected by any measures of compulsion.

3. It is understood to be the opinion of the Government of India that such evacuation of houses should be enforced even in the face of ill-will and opposition. His Excellency the Governor in Council ventures to think, however, that neither the preliminaries necessary to carry out such a measure nor the probable consequences of doing so have been fully realised by Dr. Cleghorn or the Government of India. His Excellency is advised that, to give full effect to such a proposal, at the lowest computation, 30,000 persons belonging to different races, castes, and creeds would need to be provided with temporary dwellings. There is no site within the limits of the Bombay municipality which would accommodate a tenth of this number. Great difficulty has attended all attempts at the segregation of healthy inmates of infected houses hitherto made, and very limited success has been achieved. From the beginning of the outbreak of this disease it has been found that the native inhabitants of the city are very reluctant to leave their houses or to allow any member of their family afflicted with the disease to be taken away. Indeed, their dread of the disease itself appears to be hardly so powerful as their horror of being removed from their houses. Ignorance and superstition prevent them from discerning either that removal to a hospital is good for the sick or removal to infected dwellings good for the healthy, and they are far more easily moved by fear of the municipal and police authorities than by any realisation of the benefits that will accrue from a sensible course of action. It is estimated that not less than 300,000 persons have already fled from Bombay, moved so to do, not only by fear of the plague, but quite as much, if not more, by an unfounded and unreasonable fear of what might happen to them at the hands of the police and municipal authorities were they to remain.

4. The gentlemen who signed the memorandum have expressed themselves to the effect "that there will be no difficulty in providing sufficient and suitable accommodation for people removed from infected houses, and that it only requires the concurrence and sympathy of the leaders of the different sections of the community to render the plan proposed by them a success." In so doing they have failed to measure the force of the influences I have already described; they have forgotten that nearly all the chief leaders of the various communities have left Bombay; and they have failed to realise that there is not the space within the city for a large health camp.

5. An alternative scheme is to construct large health camps outside the city. This would take some months to accomplish, for both materials and labourers are scarce; the latter so scarce that it is with great difficulty that a sufficient number can be obtained for the cleansing and disinfecting operations that have been and are still being carried on in the city. Indeed it seems unlikely that any large camps could be

constructed until so short a time before the setting in of the monsoon (when they would become unsuitable for habitation) as to make their construction of little practical use.

6. Again, this Government are advised that nothing short of compulsion would induce the people to leave their houses, and even if driven out of them, they probably could not be induced to resort to the health camps. They would, it is believed, leave Bombay altogether and would present to the popular view the spectacle of a people driven by force from their homes. This, it is feared, could lead but to one result—a state of panic so intense that sweepers, scavengers, and labourers alike would desert Bombay. This would be a disaster far greater than any that has yet befallen the city; for trade would be paralysed, shops closed, the docks and mills deserted, and the municipality left unable, not only to carry out any special measures of cleansing and disinfecting, but to conduct the ordinary sanitary necessities and conveniences of every-day life.

7. But great as would be the evil to Bombay, this is not the only unhappy result that would attend such a feeling of panic. The exodus has already necessitated precautionary measures against arrivals from Bombay in every part of this Presidency; it has led to the plague becoming endemic in Poona and in parts of the Thana district; it has resulted in overcrowding by refugees from Bombay of many cities and towns, and it has made demands on the number of qualified medical practitioners available to Government that can with difficulty be met. Every addition to the number of refugees adds to the possibility of spreading the disease and to the difficulty of dealing with it should it break out.

8. I am to assure the Government of India that every precaution is taken short of measures that would, it is feared, lead to the panic and the evils I have described. The liberality of the Corporation and the energy displayed by Mr. Snow, Municipal Commissioner, Brigade-Surgeon-Lieutenant-Colonel Weir, executive Health Officer, and Mr. James, executive engineer, and their subordinates are, as is surmised in paragraph 6 of your letter under reply, appreciated by this Government no less than by his Excellency the Governor-General in Council, and it is a very great satisfaction to the former to find these efforts are so cordially acknowledged. But it is not only their energy that deserves notice; it is the conviction of this Government, as will be gathered from what I have written, that they have shown sound sense. The measures taken may not have been so stringent as those that would, in a European city, have gained general support, but they are the most stringent that it was possible to undertake without almost certainly producing a calamity more serious and more widespread than the very terrible one that has now to be dealt with.

9. At the same time the segregation of the healthy and the evacuation of infected houses are recognised as desirable measures and are being and will be carried out in so far as is possible without leading to a general panic.

10. My telegram No. 227-P., dated 10th instant, has put you in possession of information regarding regulations to be framed for Bombay City under the Epidemic Diseases Act, 1897. A copy of these regulations will be sent to the Government of India as soon as they are published.

11. The question of strengthening the building regulations and taking enlarged powers to prevent overcrowding is one that is engaging the earnest attention of Government and will be made the subject of a separate communication to the Government of India.

TELEGRAM No. 664, dated Calcutta, 21st February 1897.

From the Secretary to the Government of India, Home Department, to the Secretary to the Government of Bombay, General Department.

Government of India having carefully considered your telegram 292-P., dated 13th, and letter 263-P., dated 12th, regarding evacuation of plague-infected houses, regret that, while giving full weight to the opinions of the Local Government in regard to the disposition of the people, they are unable to accept view that considerations adduced in your letter show that it is impracticable to induce people to move from infected houses to healthy locality. This course has been strongly recommended by the medical adviser of the Government of India. It is only measure attacking root of evil which appears practicable, and experience in Karachi seems to show that it can be so introduced as not to offend the prejudices of the people and is effectual in holding disease in check. In Bombay, on contrary, returns show disease getting worse and worse notwithstanding large emigration, and continuance of epidemic in its present intensity is a standing menace to health of whole continent of India. Government of India have previously urged that necessary preliminary to adopting course is preparation of camp accommodation in healthy locality. Accommodation for all native quarters of town no doubt cannot be prepared at once, but accommodation to provide for those evicted from some of the areas in which disease is most virulent could be quickly prepared, and fact that, as reported in your demi-official of 16th, plague is now most prevalent in villages in north part of island should facilitate this being done. Governor-General in Council therefore trusts that Bombay Government will at once take steps to provide accommodation such as that at Karachi, and will make systematic endeavour to remove to it people from infected houses beginning with the worst quarters. Government of India would not desire that measures should be taken which would cause panic or other of the evils described in your letter, but they have no apprehension that preparation of healthy accommodation will have any such effect, and they think that any difficulties in inducing persons to worse quarters to seek comparative safety in camp in healthy locality could be removed if necessity were quietly but firmly explained. Experiment having been started for worst quarters could then be extended. Government of India trust that Governor in Council will earnestly consider proposals in this telegram and will recognise that no time must be lost in at least making a serious endeavour to carry them out. They will be glad to be informed of the measures taken.

No. 446-P., dated 23rd February 1897.

From the Secretary to the Government of Bombay, General Department, to the Secretary to the Government of India, Home Department.

As an *ad interim* reply to your wire 664 of the 21st, I communicate following substance of a report by Snow on your similar telegram 459 of the 12th. On occurrence of plague and even previously gangs have lime-washed places, cut off water-supply, taken off roofs, &c., hence hundreds of houses vacated. These regularly treated and kept vacant. Simultaneously huts have been and are being erected and every effort made to get people into them. Huts will continue to be erected. It will be seen that your object of removing occupants from infected houses has been studiously prosecuted.

Dated Bombay, 17th February 1897.

From Mons. W. M. Haffkine to the Secretary to the Government of India, Home Department.

I have the honour to communicate the following information on the attempt at curative treatment, which has been made by means of the anti-toxine at present under preparation here at Siwree, during the outbreak of plague in Byculla Gaol.

A patient called Ganoo Balloo, admitted to the hospital since three days, has received one injection of anti-toxine, but died within 11 hours.

The following patients were selected for treatment immediately after their admission to the isolation shed, though after some time has elapsed since the onset of the disease:—

Admissions on the 30th January 1897.

Of six patients admitted in the morning, the two most serious, Jeeva Virchand and Syed Jonas Ali were selected for the anti-toxic injection, the four milder left to the ordinary treatment.

Of the four milder, three have died within two, four, and six days.

The two others, specially treated, have survived.

Admissions on the 31st January 1897.

Of the two cases admitted the most serious one, Anuah Vishroa, has been selected for the special injection, the other milder has been left to the ordinary treatment.

The milder case ended fatally after three days' illness; Apuah Vishroa is still alive.

Admissions on the 1*st February* 1897.

Of the five cases admitted, the two most serious, Kaloo Bhimsha and Keshao Umar, have been selected for the anti-toxic injections, the three milder left to ordinary treatment.

The two treated cases have ended fatally after six and 12 days' illness; of the not treated specially, two died after four and nine days.

II. Analysing the result in connexion with the period elapsed between the onset of the attack and the beginning of the anti-toxic treatment, it appears that—

Out of the six patients treated—

four have been taken for the special injections within 24 hours after attack, and two patients, after two and three days' illness.

Of the four patients admitted for treatment within 24 hours, three have survived, and one lived for 12 days.

The two admitted three and two days after attack have died 11 hours and 4 days after beginning of treatment.

I believe, from the above results, that there is the possibility of the anti-toxic serum rendering service in the treatment of the disease.

At the present stage of the preparation, for producing any marked effect on the disease, the following restrictions impose themselves: it is necessary to start the treatment within the first 24 hours, and a large number of repeated injections are required.

The possibility remains that, with the further maturation of the fluid, its power will increase, so as to effect an influence on older cases, and when used in smaller doses.

No serum can as yet be issued for the use of the general public.

Dated Bombay, 16th February, 1897.

From Mons. W. M. HAFFKINE, to the Secretary to the Government of India, Home Department.

In view of the urgency of the case I have the honour to communicate the following information concerning the outbreak of plague in Her Majesty's House of Correction, Byculla, where a considerable portion of inmates had volunteered to undergo the prophylactic treatment, and where the first observations on the effect of this treatment have been collected.

Between the 23rd and 29th of January last, nine cases of plague have occurred in the gaol, of which five proved fatal, the population at the beginning of the outbreak numbering 345 souls.

The prophylactic treatment has been applied on the 30th January, 154 of a total 337 volunteering to be inoculated.

Occurrences on the Day of Inoculation.

In the forenoon of the day of inoculation six new patients have been admitted to the hospital suffering from plague; of these three proved fatal.

The inoculations were applied in the afternoon. One of the inoculated, Keshav Umar Shankar, prisoner No. 672, had at the time of inoculation a painful gland in the left groin; two others, Abdool Karim, No. 1356, and Govind Pandoo, No. 1222, developed painful glands in the left axilla the same evening. These three cases have also proved fatal.

On the 1*st day after inoculation there were:*

Amongst 177 not inoculated prisoners two cases, of which one proved fatal.
Amongst 151 inoculated one case, who rapidly improved and recovered.

On the 2*nd day after inoculation there were:*

Amongst 172 non-inoculated one case which proved fatal.
Amongst the non-inoculated—*Nil.*

On the 3rd day after inoculation there were:

Amongst 173 non-inoculated one case, which proved fatal.
Amongst the inoculated—*Nil.*

On the 5th day after inoculation there were:

Amongst 171 non-inoculated one case, which proved fatal.
Amongst 146 inoculated—*Nil.*

On the 6th day after inoculation there were:

Amongst 169 non-inoculated one case, which proved fatal.
Amongst the inoculated—*Nil.*

On the 7th day after inoculation there were:

Amongst the 169 non-inoculated five cases, of which one proved fatal.
Amongst 146 inoculated one case, who is alive.
Since the 6th instant, no more cases have occurred in the gaol.

The following is a tabulated form of the occurrences:—

Date of Occurrences.		Amongst the Non-inoculated.	Amongst the Inoculated.
23rd to 29th January 1897		9 cases, 5 fatal.	——
30th January 1897, the day of inoculation.	Forenoon, before inoculation	6 cases, 3 fatal.	——
	Afternoon, after inoculation	- - - -	3 cases, fatal.
1st day after inoculation, 31st January 1897		2 cases, 1 fatal	1 case.
2nd day after inoculation, 1st February 1897		1 case, fatal.	——
3rd day after inoculation, 2nd February 1897		1 case, fatal.	——
5th day after inoculation, 4th February 1897		1 case, fatal.	——
6th day after inoculation, 5th February 1897		2 cases, 1 fatal.	——
7th day after inoculation, 6th February 1897		5 cases, 1 fatal	1 case.
Total, after the day of inoculation		12 cases, 6 fatal (in an average daily strength of 173 non-inoculated).	2 cases (in an average daily strength of 148 inoculated).

The experience gained by the observation in this gaol turns to show—

1st.—That the injection of 3 ccm. of the prophylactic seems to be sufficient to effect the desired protection, no repetition of inoculation being necessary to arrest the disease during an existing epidemic.

2nd.—That the prophylactic is powerless to arrest the symptoms of plague already started, or which develop within a few hours, but there is the possibility of its influencing the disease in the incubation period, in individuals infected three or four days previously.

3rd.—That the time necessary for the plague prophylactic to produce the protective effect is shorter than in any preventive treatment known, this period being in the anti-cholera inoculation of four days, in vaccination against small-pox of seven days, in the inoculation against anthrax of 12 days, in the inoculations against rabies of 15 days, and in the present treatment, apparently less than one day.

4th.—The question remains open as to how long will the inoculated persons remain proof against the disease, and, therefore, in order to ensure the probability of a more lasting effect, it is advisable to apply repeated inoculations, with doses higher than the above mentioned.

The above conclusions are temporary and refer only to the teaching of the particular outbreak in question. There remains fully the possibility of the future experience compelling us to modify the above conclusions, though the expectation is justifiable that the general bearing of the results as above detailed will remain unshaken.

From the GOVERNMENT OF INDIA to the SECRETARY OF STATE FOR INDIA.

(Sanitary No. 9.)

MY LORD, Calcutta, March 10, 1897.

WE have the honour to address your Lordship in continuation of our Despatch No. 7 (Sanitary), dated the 24th February 1897, on the subject of the plague.

2. We are glad to be able to report that the position of affairs in Bombay is distinctly better. There has been a decrease in the reported number of plague seizures and deaths, and the total daily mortality from all causes shows a marked diminution. During the week ending the 22nd February, the average daily number of seizures and deaths was 115 and 117, respectively; during the following week the daily average fell to 107 and 99, whilst during the period March 2nd to March 8th it has been 99 and 84. The average daily number of deaths from all causes registered during the week ending February 16th was 244; during the week ending February 23rd, 233; during the week ending March 2nd, 209; and during the period March 3rd to March 8th, 185. Persons are now returning to the quarters of Bombay, which are comparatively free from plague, from the more infected outlying suburbs, and the Government of Bombay have therefore found it necessary to watch persons entering as well as those leaving Bombay. In the suburbs of Kurla, Bandora, and Bhiwandi the plague continues to be severe. Outside Bombay in the Presidency proper the number of indigenous cases has increased, and the disease shows a tendency to spread, especially in the Thana and Surat districts. The total number of seizures reported up to the 5th March amount to 1,713 in the Thana district and in Surat to 207. Of the Surat cases 151 have occurred since the 24th February. In Poona the plague has rapidly increased in intensity. The number of seizures reported up to the 6th March is 754, and the real position is worse than is indicated by these figures. It has been found impossible to obtain an accurate statement of deaths from plague in Poona, but in January the number of deaths from all causes amounted to 497 against a quinquennial average of 225, and from the first to the 26th February the number of deaths from all causes was 882 against a quinquennial average of 225. In Karachi the week ending the 1st March shows a further improvement over that reported in our last Despatch, the average daily number of seizures and deaths being 35 and 28 respectively, against 39 and 31 reported during the previous week. Since the 1st March there has been a slight retrogression, the average daily number of seizures and deaths during the period March 2nd to March 7th being 38 and 29 respectively. In the Karachi health camps 31 seizures and 19 deaths have been reported since the 16th February. A list of the 12 health camps which have been established in various parts of Karachi has been furnished by the Commissioner in Sind and is appended* to this Despatch. On the 25th February the total population of the several camps amounted to over 3,500. Since then some inhabitants of the Nussurpuri camp have been permitted to return and occupy such houses in the town as have no plague cases in them or in their vicinity. Outside Karachi the plague shows no tendency to spread in Sind, and Sukkur is the only other place from which indigenous cases have been reported. Here there have been eight indigenous cases since the 12th February, of which three have proved fatal.

3. The Government of Bombay are making most stringent efforts to subdue the plague in the City of Bombay and to combat the tendency to spread which the disease is now manifesting. The Government of Bombay have issued a Notification under the Epidemic Diseases Act, of which a copy is appended* to this Despatch, appointing an executive committee to carry out, under the direct orders of the Government, all measures within the City of Bombay which are considered necessary to suppress, and prevent the spread of, the plague. In a letter addressed to the President communicating this decision of the Bombay Government his Excellency the Governor

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* Not reprinted.

remarked that the measures of cleansing and disinfecting which the Corporation have assiduously carried out having proved ineffectual it is now necessary to adopt larger and different methods. The Committee consists of four officers: Brigadier-General Gatacre, commanding the district (chairman); Mr. Snow, the Municipal Commissioner; Surgeon-Major Dimmock, and Mr. James, one of the engineers of the Corporation. The whole area of the island of Bombay has been divided into 12 districts, each under the administration of a medical officer, who will be responsible to the Plague Committee for the working of his district. Arrangements are being made for more systematic collection of information, for more hospitals, and for segregating in small and scattered camps the healthy inmates of infected houses. On the 20th February the Government of Bombay published a Notification under the Epidemic Diseases Act, of which a copy* is appended to this Despatch, prescribing rules for the whole of the Bombay Presidency and Sind, with the exception of the City of Bombay and military cantonments. These rules enumerate the officers of Government and others from whom the "plague authorities" who are to cause the rules to be carried out are to be selected. They prescribe the examination and if necessary the detention of passengers at rural railway stations and landing places at which special arrangements have not been made; the examination and, if necessary, the detention of travellers by road; the report by the head of the family of all sickness which is due or likely to be due to plague; the examination and isolation of all suspected persons; the evacuation of houses which are either infected or unfit for habitation; the abatement of overcrowding; the cleansing and disinfecting of buildings; the destruction of insanitary huts; the destruction or disinfection of infected goods, clothes, and other articles; and the regulation of burials. The Government of Bombay have forwarded for our information a number of the detailed orders which they have from time to time issued with reference to these rules, which show that they are being energetically enforced in the infected areas and their neighbourhood. In Poona an Assistant Collector and an officer of the Indian Medical Service have been placed on special duty to devise and carry on the necessary sanitary measure. European Assistant Collectors are in charge of all the worst talukas of the Thana district, and special plague mamlatdars have been appointed for Salsette and Bassein. We have sanctioned, at the instance of the Government of Bombay, recoverable advances aggregating Rs. 50,000 for the Municipalities of Karachi and Poona which are now in want of funds. A commissioned medical officer has been deputed to Sukkur with reference to the indigenous cases that have occurred there.

4. The Agent to the Governor-General, Baluchistan, and the Chief Commissioner of Ajmere-Merwara have been authorised to exercise the general powers conferred by section 2, sub-section (1), of the Epidemic Diseases Act. To this Despatch are appended the notifications* that have been issued by Local Governments and Administrations under the Epidemic Diseases Act in addition to those forwarded with our previous Despatches. A Notification was also issued on the 6th instant, under the powers conferred on the Governor-General in Council by the Epidemic Diseases Act, prohibiting any person who has resided or been in the Bombay Presidency, Sind, or Baroda, since the 1st January 1897, from embarking at any port in British India, with the object of proceeding as an emigrant or as a labourer, to any port out of British India.

In paragraph 3 of our Despatch of the 24th February we informed your Lordship of a suggestion we had made to Local Governments and Administrations regarding a system for maintaining a watch on persons travelling by rail and presenting tickets from an infected station. We forward, for your Lordship's information, a copy of a circular* we have issued in the Public Works Department giving instructions on this subject to the railway authorities. Several Local Governments and Administrations have also issued Notifications under the Epidemic Diseases Act regarding the action to be taken to cause passengers to be properly watched so as to prevent them from disseminating infection.

5. We forward, for your Lordship's information, a copy of a note by Mr. E. H. Hankin on the vitality of the bubonic plague microbe in the chief grain exports from Bombay. The Government of Bombay telegraphed to Surgeon Major-General Cleghorn at Venice that this report proved almost to demonstration that grain purposely infected

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* Not reprinted, except Notification regarding rules for Port of Karachi, *see* next page.

does not permit the existence of microbes for more than four to six days. We are, however, advised that Mr. Hankin's experiments are not conclusive, since the loss of pathogenic property may be demonstrated without the loss of vitality, so that the bacilli may under favourable local conditions re-acquire toxic properties. We informed Dr. Cleghorn of this view.

6. Dr. Yersin arrived in Bombay on the 5th instant with a supply of serum.

7. The Government of Madras have, with our sanction, imposed quarantine rules, similar to those they have already issued, for all ports in the Madras Presidency against all ports in the Bombay Presidency and Sind and against Goa. The Government of Bengal have also issued quarantine rules against Goa for the port of Calcutta. Forty-seven cases of plague have in all been reported from Goa amongst immigrants from infected places.

8. The first batch of the 480 pilgrims who were collected at the Nasik camp were permitted to leave for their homes on the 8th instant. On the 27th February the Government of Bombay reported that a case of plague had occurred in the camp, and that the sufferer had been removed to a distant isolation hospital. On receiving this report, we issued orders to the effect that the pilgrims must be detained until 10 days from the date of the removal of the plague patient. On the 2nd March, however, the Government of Bombay telegraphed that the case had turned out to be one of smallpox, and the orders imposing the further period of detention of the pilgrims were cancelled. The Local Governments and Administrations are providing escorts to accompany the pilgrims belonging to their territories from the Nasik camp. In order to lessen the disappointment of these intending pilgrims and as some compensation for the detention and inconvenience to which they have been subjected, we have sanctioned the repayment to them of the cost of the tickets which they had purchased for the passage to Jeddah, and also of the price of a third class railway fare from their homes to Bombay. We have also sanctioned the repayment to a number of poor pilgrims from Northern India, who were stopped at Calcutta, of the price of a third class railway fare from their houses to Calcutta. The total cost of these refunds is estimated at about Rs. 20,000, and we consider that the political effect of the payments will fully repay this expenditure.

We have, &c.
(Signed) ELGIN,
&c., &c.

ENCLOSURES.

NOTIFICATION No. 820 $\frac{322}{P.}$, dated Bombay Castle, 15th February 1897.

The following rules have been prescribed by his Excellency the Governor in Council in accordance with the Epidemic Diseases Act of 1897 :—

1. No vessel shall leave the Port of Karachi until she has been inspected by the health officer of the port and the master or person in charge of such vessel has obtained a bill of health or certificate from such officer that the master or person in charge, officers, crew, and passengers (if any) of such vessel are free from any dangerous epidemic disease.
2. Should the health officer of the port be of opinion that any person on board of any vessel so inspected is suffering from a dangerous epidemic disease he shall refuse to give a bill of health or certificate as aforesaid unless and until such person is removed from the vessel.
3. After the master or person in charge of the vessel has obtained any bill of health or certificate under the provisions of these rules no person or cargo shall be admitted or taken on board such vessel before she leaves the Port of Karachi until such vessel is again inspected by the health officer of the port and another bill of health or certificate obtained from such officer by the master or person in charge of such vessel.
4. No port clearance shall be delivered to any vessel unless and until the master or person in charge thereof shall produce the bill of health or certificate so to be obtained as aforesaid, and it shall be the duty of Customs officers to refuse delivery of the port clearance without the production of such bill of health or certificate.

5. All steamers and square-rigged vessels will be inspected by the Health Officer before leaving the wharves or moorings, and all coasting craft shall anchor between and to the west of No. 1 mooring and deep-water point for the purpose of being medically inspected by the Health Officer of the port on the eve of their departure.
6. Vessels not leaving port within 24 hours after receiving pratique may not leave without re-inspection. The date and hour of his inspection will be noted in the bill of health by the Health Officer.
7. The medical inspection of vessels and passengers shall be carried out between sunrise and sunset.
8. Disobedience to any of the above Rules Nos. 1 to 6 will subject the offender and all persons aiding or abetting him to a prosecution under the Indian Penal Code.

J. DeC. Atkins,
Secretary to Government.

Dated Health Office Laboratory, Bombay, 17th February 1897.

From E. H. Hankin, Chemical Examiner and Bacteriologist, North-West Provinces, Oudh, to the Secretary to Government, General Department, Bombay.

Sir,

In accordance with Government order No. 564/107–P, dated 2nd February, I have the honour to submit the following report on the vitality of the bubonic plague microbe in the chief grain exports from Bombay.

2. My experiments have been carried out with numerous specimens of the following articles :—

Linseed.
Yellow rapeseed.
Brown ,,
Tilseed or gingelly seed.
Groundnuts.
Castor seed.
Poppy ,,
Wheat (new hard red).
,, (another lighter variety).
Flour.

3. In order to test whether the microbe was still present in a living condition in a specimen of previously infected grain, my method has been to make an extract of this grain and to inject it into a mouse. The great susceptibility of mice to bubonic plague and to infectious diseases in general, while advantageous in one sense, has been disadvantageous in another, in that the mice might have died owing to the presence of other microbes than the bubonic in the grain. In some cases the *post-mortem* appearances have suggested that this has occurred, but as it is impossible to give an absolute proof that the bubonic microbe had nothing to do with the health of the animal in these cases, I have in general regarded the survival of the mouse as the only adequate proof that the microbe in question was no longer living in the previously infected grain.

4. My first experiment was carried out with the bubonic plague microbe derived from cultures on agar-agar. Two cultures, each about a week old, were employed. Of these one had been derived from a patient in Bombay, the other had been recently isolated from a rat found dead of the plague. The growth was scraped off the surface of the jelly, and well shaken up in 15 cubic centimetres of bouillon. The mixture was then placed in a burette. A sample of the grain to be tested weighing about a kilogram was placed in a previously sterilised stoppered foot-glass. One cubic centimetre of the bouillon emulsion of the microbe was then poured into the foot-glass, care being taken that it should fall into the centre of the grain. The stopper was replaced, and the foot-glass was immediately violently shaken for about a quarter of an hour. At the end of this time all traces of moisture from the bouillon that had been added had completely vanished. On shaking a cloud of dry dust could be seen in the air in the foot-glass. In order to avoid inhaling this presumably infected dust, the next part of the experiment was carried out in the open air. The grain was poured from the foot-glass into the linen bag in which I had received the specimen. From the bag a bulk of about 40 cubic centimetres was poured into a measuring glass that had been previously sterilised. This small bulk of grain was then wetted with sterile bouillon and stirred up with a glass rod. About a half to a quarter of this bouillon was sucked up into a pipette and injected into a mouse. The white mice employed had generally been in my possession for some time. Each lived in a separate cage. The cage before being occupied had in all cases been sterilised in an autoclave. The pipettes employed for the injections were always disinfected by boiling in water previous to use. The

skin of the mouse at the point of inoculation was, previously to the injection, rubbed with a mixture of carbolic acid water and alcohol.

The extracts made in this manner, as soon as possible after the infection of the grain, were injected into mice with the following results:—

Mouse treated with	extract of	linseed	Died within 24 hours.
,,	,,	yellow rapeseed	,, 72 ,,
,,	,,	brown ,,	,, 24 ,,
,,	,,	tilseed	,, 48 ,,
,,	,,	groundnut	,, 24 ,,
,,	,,	castor seed	,, 24 ,,
,,	,,	poppy ,,	,, 24 ,,
,,	,,	wheat (new hard red)	,, 48 ,,
,,	,,	wheat of another kind	Survived.
,,	,,	flour	Died within 48 hours.

Two days after the infection of the grain, specimens were again taken, extracted in exactly the same manner as before, and injected into another series of mice with the following results:—

Mouse treated with	extract of	linseed	Died within 7 days.
,,	,,	yellow rapeseed	,, 24 hours.
,,	,,	brown ,,	,, 4 days.
,,	,,	tilseed	Survived.
,,	,,	groundnut	Died within 11 days.
,,	,,	castor seed	,, 48 hours
,,	,,	poppy ,,	,, 48 ,,
,,	,,	wheat (1st variety)	Survived.
,,	,,	wheat (2nd variety)	,,
,,	,,	flour	Died within 48 hours.

At this time I found out that an extract of castor seeds to which no bubonic microbes had been added was equally fatally as the infected seeds to mice, and I consequently was obliged to omit this article from my experiments. The reason of this is that the castor seeds contain a poison known as ricin, which is intensely active on subcutaneous injection. Stirring up the seeds with bouillon as described caused a fatal dose to pass into solution. The mouse injected with such an extract would certainly die whether or not the bubonic microbe was present. If I made the extract of the seeds so rapidly that a fatal dose of the poison would not be dissolved, I could have no certainty that sufficient time had elapsed to allow the microbes to pass into suspension in the bouillon.

Four days after the commencement of the experiment, extracts of the grain were again made as before and injected into mice as follows:—

Mouse treated with	extract of	linseed	Died after 1 days.
,,	,,	yellow rapeseed	Survived
,,	,,	brown ,,	,,
,,	,,	tilseed	,,
,,	,,	groundnut	,,
,,	,,	poppy seed	,,
,,	,,	wheat (1st variety)	,,
,,	,,	wheat (2nd variety)	,,
,,	,,	flour	,,

Eleven days after the commencement of the experiments extracts were again injected. A change in procedure was made in this case in that the grains instead of being merely stirred in a measuring glass with a glass rod in order to produce the suspension in the bouillon, were slightly ground up in a mortar until the mixture of bouillon and débris was so thick that I could with difficulty suck it up into the pipette. The results obtained were as follows:—

Mouse treated with	extract of	linseed	Survived.
,,	,,	yellow rapeseed	,,
,,	,,	brown ,,	Died within 24 hours.
,,	,,	tilseed	,, 7 days.
,,	,,	groundnut	,, 24 hours.
,,	,,	poppy seed	Survived.
,,	,,	wheat (1st variety)	,,
,,	,,	wheat (2nd variety)	,,
,,	,,	flour	,,

Thirteen days after the commencement of the experiment extracts were again injected into mice with the following results. In this as in later experiments the grain was extracted by grinding it in a mortar with the bouillon :—

Mouse treated with extract of	linseed	Survived.
,, ,,	yellow rapeseed	Died after 24 hours.
,, ,,	brown ,,	Survived.
,, ,,	tilseed	,,
,, ,,	groundnut	,,
,, ,,	poppy seed	,,
,, ,,	wheat (1st variety)	,,
,, ,,	,, (2nd ,,)	,,
,, ,,	flour	,,

The mouse treated with the yellow rapeseed extract showed no appearances microscopically or otherwise of having succumbed to bubonic infection. There was nothing noteworthy at the seat of inoculation, in the back, but there was an extensive blood-stained œdema on the under-side of the neck, appearances suggesting that it had died from some accidental infection.

The above experiment indicates that the bubonic microbe derived from pure cultures perishes within 13 days after being added to the above-mentioned specimens of grain and seeds. The question now arises whether the microbe would show a greater or lesser degree of resistance when derived from the organs of animals dead of the disease. A reply to this question is given in the following experiment.

The spleen of a rat, and the spleen, liver, and œdema from a mouse, both animals having died after plague inoculation, were ground up in a sterile mortar with powdered glass and mixed with 10 cubic centimetres of bouillon. One cubic centimetre of the mixture was then added to half a kilogram of each of the specimens of grain, and at once violently shaken as in the previous experiment. Extracts were at once made and injected into mice with the following results :—

Mouse injected with	linseed extract	Died within 48 hours.
,, ,,	yellow rapeseed	Survived.
,, ,,	brown ,,	Died in 5 days.
,, ,,	tilseed	,, 6 ,,
,, ,,	groundnut	,, 6 ,,
,, ,,	poppy seed	Survived.
,, ,,	wheat (2nd variety)	Died in 4 days.
,, ,,	flour	,, 4 ,,

The fact that two mice in this series survived and that the others only succumbed after an unusual delay may be due to the fact that the grains were extracted very rapidly with the bouillon, and not ground up in it as in the preceding and following experiments. Consequently it is probable that fewer microbes than usual became suspended in the bouillon extracts.

Two days later extracts were again made and injected into mice as follows :—

Mouse treated with extract of	linseed	Died within 24 hours.
,, ,,	yellow rapeseed	,, 24 ,,
,, ,,	brown ,,	,, 24 ,,
,, ,,	tilseed	Survived.
,, ,,	groundnut	Died in 24 hours.
,, ,,	poppy seed	,, 3 days.
,, ,,	wheat	Survived.
,, ,,	flour	,,

Four days after the commencement of the experiment extracts were again made and injected as follows :—

Mouse treated with extract of	linseed	Died in 5 days.
,, ,,	yellow rapeseed	,, 3 ,,
,, ,,	brown ,,	,, 2 ,,
,, ,,	tilseed	Survived.
,, ,,	groundnut	,,
,, ,,	poppy seed	,,
,, ,,	wheat	,,
,, ,,	flour	,,

The above mice that died showed no appearances under the microscope or in cultures suspicious of bubonic plague. Their spleens were injected into three other mice which have remained in good health.

Six days from the commencement of the experiment extracts were again injected into mice with the following results :—

Mouse treated with extract of	linseed	Survive
,, ,,	yellow rapeseed	,,
,, ,,	brown ,,	,,
,, ,,	tilseed	,,
,, ,,	groundnut	,,
,, ,,	poppy seed	,,
,, ,,	wheat	,,
,, ,,	flour	,,

Thus in this experiment grain infected with the organs of animals dead of the plague lost its infectious power completely within six days.

The remaining point of the inquiry is the resisting power of the microbes as it exists in secretions of the human patient. For this purpose I chose the sputum in which the microbe has been shown by Surgeon-Captain Childe, Professor of Pathology in the Grant Medical College, to exist in large numbers and in a very virulent condition.

Sputum recently obtained from a patient was mixed with an equal volume of bouillon. One cubic centimetre of the mixture was immediately added as before to each of the specimens of grain. Owing to an accident the linseed could not be used in this experiment.

Extracts made immediately were injected into mice with the following results :—

Mouse treated with extract of	yellow rapeseed	Died within 24 hours.
,, ,,	brown ,,	,, 24 ,,
,, ,,	tilseed	,, 24 ,,
,, ,,	groundnut	,, 24 ,,
,, ,,	poppy seed	,, 24 ,,
,, ,,	wheat	,, 48 ,,
,, ,,	flour	,, 24 ,,

Two days later extracts were again made and injected. The results were as follows :—

Mouse treated with extract of	yellow rapeseed	Died within 24 hours.
,, ,,	brown ,,	,, 24 ,,
,, ,,	tilseed	,, 24 ,,
,, ,,	groundnut	,, 48 ,,
,, ,,	poppy seed	,, 24 ,,
,, ,,	wheat	,, 48 ,,
,, ,,	flour	,, 24 ,,

Four days after the commencement of the experiment extracts were again injected as follows :—

Mouse treated with extract of	yellow rapeseed	Survived.
,, ,,	brown ,,	Died within 24 hours.
,, ,,	tilseed	Survived.
,, ,,	groundnut	,,
,, ,,	poppy seed	,,
,, ,,	wheat	Died within 48 hours.
,, ,,	flour	,, 48 ,,

Six days after the commencement of the experiment extracts were made and injected with the following results :—

Mouse treated with extract of	yellow rapeseed	Survived.
,, ,,	brown ,,	,,
,, ,,	tilseed	,,
,, ,,	groundnut	,,
,, ,,	poppy seed	,,
,, ,,	wheat	,,
,, ,,	flour	Died in 3 days.

No reason could be obtained from *post-mortem* appearances or cultures for thinking that the last-mentioned mouse had died of bubonic plague. Further, the flour had shown no special capacity for nourishing the bubonic microbe in my other experiments, so that it would appear to be probable that the bubonic microbe had died out in this case as in the others. Nevertheless I am continuing my experiments with flour, and hope to make a separate report to you on the subject in a few days.

Earlier experiments carried out with another kind of grain—bájri—had shown me that the bubonic microbe in this case dies out within two days. In these experiments I had kept the grain damp, so that eventually it became covered with mildew. In the experiments now described, by keeping the grain in a dry condition in bags, I imitated more closely the conditions that exist in commerce. Under such conditions the microbe of bubonic plague appears to die out within from four to six days. In a few instances my experiments have suggested that it may survive for periods extending up to 13 days. But it must be remembered that my experiments had to be carried out with the aid of mice, owing to the impossibility of obtaining a sufficient supply of healthy rats in Bombay at the present time. It is more probable that the death of the mice in these exceptional instances was due to the accidental presence of other microbes than that unusually resistant forms of the bubonic microbe were present.

From the GOVERNMENT OF INDIA to the SECRETARY OF STATE FOR INDIA.

(Sanitary No. 12.)

MY LORD, Calcutta, March 31, 1897.

IN continuation of our Despatch No. 9 (Sanitary), dated the 10th March 1897, we have the honour to send your Lordship the following further report on the outbreak of plague.

2. The main features exhibited by the plague during the past fortnight have been a continuation of the marked improvement in the town and island of Bombay, and some increase of the tendency to spread elsewhere. It was reported in our last Despatch that during the week ending the 8th March, the average daily number of seizures and deaths in Bombay had fallen to 99 and 84 respectively, the following week shows a further fall to 82 and 72, and during the nine days ending the 24th instant, the daily averages were only 69 and 64 respectively. During the week ending the 8th March the average daily total of deaths from all causes in Bombay was 187; during the following week 184, and during the nine days ending the 24th instant 163. In the suburbs there has been some diminution in Bandra and Coorla, and an increase in Bhiwandi. The general situation, as it stood on the 12th instant, is summed up in the telegram sent to your Lordship by his Excellency the Governor of Bombay on the 14th, and to this Despatch is attached a statement* received from the Government of Bombay showing separately the imported and indigenous seizures and deaths that have occurred in the different localities in the Bombay Presidency up to the 5th March and during the week ending the 12th March. In the Presidency proper the disease continues to be severe in Poona and the Surat and Thana districts. In Poona and the Thana district the number of seizures reported since the 7th instant amount to 803 and 830 respectively, and in Surat 495 cases have been reported since the 3rd instant. There have been indigenous cases in the districts of Nasik, Poona, Satara, Kolaba, Ratnagiri, Baroda, Kathiawar, Kolhapur, and Cutch, and in the Baroda and Palanpur States, but in none of these places have the number of cases approached the number in Poona town, Surat, and Thana. In the City of Karachi the number of seizures and deaths shows some fluctuation, but on the average remains nearly stationary. During the week ending the 7th March the average daily numbers of seizures and deaths amounted to 38 and 29 respectively, during the following week to 39 and 28, and during the nine days ending the 23rd instant to 37 and 29. The tendency of the disease to spread over the City of Karachi continues, but it is dying out in the quarters first attacked except the poor Muhammadan trans-Lyari quarter. A statement* is attached showing the number of occupants of the different health camps that have been established in different parts of Karachi, since the 6th March 100 seizures and 61 deaths have been reported from these camps. Elsewhere in Sind the tendency to spread is somewhat more marked than has hitherto been the case. The number of indigenous seizures in Sukkur, though still comparatively small, has increased, and indigenous cases have been reported from the districts of Hyderabad and Shikarpur. The plague is said to be established in Sukkur and Hyderabad and to be suspected in Shikarpur.

3. Outside the Bombay Presidency and Sind the following cases have been reported since the 6th March:—

Itarsi in the Central Provinces	23
Abu Road in Rajputana	2
Ujain in the Central Indian Agency	2
Sher Shah in the Punjab	2
Goa	6

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* Not reprinted.

All these cases have been imported from infected districts and all the 23 Itarsi cases have been detected at the railway station. In addition to these imported cases, information has, we regret to state, been received of an outbreak of plague at the village of Khandraoni in the Gwalior State, distant about 18 miles from Jhansi. To this Despatch is appended the telegraphic correspondence relating to the outbreak. Intelligence was first received from the magistrate of Jhansi and telegraphed to us on the 15th instant by the Government of the North-Western Provinces and Oudh. The disease was apparently introduced by two Brahmans from Bombay about two months ago, and since then there have been 49 deaths among the 436 inhabitants of the village. Surgeon-Major Crofts, the Residency Surgeon at Gwalior, has been deputed to the scene of the outbreak and, with the sanction of His Highness the Maharaja Scindia, has adopted the most stringent remedies to prevent the spread of the disease. The village has been emptied of its inhabitants, who have been lodged in four segregation camps which are surrounded by sentries. The roll of the inhabitants is called twice a day and every person inspected. One camp is for the healthy, among whom no case has occurred, the second for the healthy among whom cases have occurred, the third for the convalescent, and the fourth is a hospital for the sick. The houses in which there have been cases of plague and the houses in their vicinity have been burnt down. These stringent measures appear to be meeting with success. There are at present only seven occupants of the hospital camp, and only one fresh case has occurred since the 19th instant. A search has been instituted to discover whether there have been any cases in the surrounding villages, and the result is that the villages appear to have been free from disease for at least three weeks. We trust that we shall shortly hear that this local outbreak has been stamped out without becoming a source of further infection.

4. We have also received intimation from the Government of the North-Western Provinces of the occurrence of 25 cases of the disease named "mahamari" near the village of Okhimath in the district of Garhwal. Your Lordship will find an account of this disease, which is said to be identical with the plague and prevails from time to time in Kumaon and Garhwal, in the copy of a note written by Surgeon-Colonel Hutcheson in the year 1894 which is appended to this Despatch. The outbreak in Okhimath appears to have no connexion with the prevalence of the plague in other parts of India. Okhimath lies on the direct route from Hardwar to the shrine of Kedarnath, and the Government of the North-Western Provinces and Oudh has taken the necessary precautions to prevent the spread of the disease by preventing pilgrims from proceeding along this road.

5. The Committee, of which General Gatacre is the President, has been taking the most energetic and systematic action in the City of Bombay. They have pushed forward remedial measures in all directions, and in especial have succeeded in establishing a number of extra plague hospitals and a number of segregation camps. It is gratifying to observe that in these efforts the Committee have been largely assisted by the native inhabitants of the city, the members of a number of different communities having, under the supervision of the Committee, arranged hospitals and segregation camps for their brethren. Similar stringent remedial measures are being adopted in other places where indigenous cases have occurred, and the Government of Bombay are also taking the most careful precautions to check the spread of the plague from place to place. In Poona in especial a thoroughly organised visitation and cleansing and disinfecting is being carried out by the military under the auspices of the local Plague Committee, and the work is said to be progressing smoothly. In Karachi the remedial measures continue to be carried out with great energy, and a Plague Committee is to be formed with a view to improved organisation.

6. The question of land quarantine has recently been occupying our most anxious consideration, and we forward, for your Lordship's information, a copy of correspondence* on the subject with the Governments of Bombay and the Punjab. The Government of Bombay suggested, in connexion with proposals for disinfecting the effects of native travellers from the infected districts, that such disinfection would be a useful adjunct of quarantine, but that there were great difficulties in carrying it out. They also suggested that it might be advisable to temporarily suspend third-class railway traffic in certain cases. The Government of the Punjab suggested that quarantine should be established against Sind at some place within the southern portion of the Punjab, cordons being thrown out for a considerable distance at right angles to the railway and the river.

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* Not reprinted.

7. After carefully considering these questions we have decided that there are overwhelming objections against the imposition of land quarantine. All experience, including that of a recent attempt made by the Government of Bombay at Sukkur, proves that land quarantine cannot be effective even on a small scale. It would be hopeless to endeavour to put in quarantine the whole of the Bombay Presidency, or the large tracts which are infected with plague. The attempt to enforce land quarantine regulations would, besides being ineffective, be likely to lead to disastrous consequences. It would give opportunities for oppression and extortion, and the quarantine stations would be likely to become centres of serious outbreaks of the disease.

The only case in which a quarantine or strict segregation appears to us to have any chance of success is when the outbreak occurs in a small place the inhabitants of which can be easily and surely isolated, and then the isolation must be carefully regulated and proper sanitary precautions must be taken. The outbreak at Khandraoni, of which an account is given in paragraph 3 above, is a case in point. Here the circumstances were exceptionally favourable, inasmuch as the village is small and it was found easy to isolate the inhabitants. The larger the place and the less complete its isolation the greater become the difficulties, and the point is very soon reached when they are insurmountable.

8. The imposition of land quarantine is also opposed to the principles which Her Majesty's Government and the Government of India have been continuously urging in respect of quarantine generally, and which were accepted by the Sanitary Conference held at Dresden in 1893, in so far as land quarantine is concerned. That Conference was composed of the delegates of a number of European States possessing natural frontiers, customs lines, and national and trade interests, all tending to facilitate quarantine regulations, and it declared land quarantine to be impossible under circumstances far more favourable to its adoption than those which exist in this country. The delegates of Her Majesty's Government at the Conference, which has recently been held at Venice, were instructed to press for the recognition of the principles of the Dresden Convention, and we understand that those principles have been re-affirmed. Apart from the inherent objections to the adoption of land quarantine, it would be impolitic at the present time to give opportunity to the European Powers to claim further restrictions against Indian trade on the ground that we had abandoned the principle of the inefficiency of quarantine.

9. We also consider that the suggestion that third-class railway passenger traffic should be stopped is not one that can be adopted. It would make invidious distinctions between classes and would cause great inconvenience and hardship. It would also not be effective; it would offer no check to the spread of the disease, otherwise than by railway, and would not prevent the chance of infection being carried by persons choosing to take first or second class tickets. It was determined at the Dresden Conference that medical intervention should be limited to the inspection of travellers and to the care of the sick. It would, therefore, in our opinion, be unjustifiable to detain passengers by railway merely on the ground that they come from an area infected with plague. But we have given instructions to the effect that in determining whether or not passengers should be detained, the widest discretion should be exercised by inspecting officers and any person who is at all suspicious either by reason of his appearance, symptoms, or the dirty condition of his clothes or effects should not be permitted to proceed without being placed under observation. We have also enjoined the adoption of measures similar to those prescribed in Part I. of the Notification, No. 58, XVI., 404 B.,* issued by the Government of the North-Western Provinces and Oudh on the 12th February last, under the Epidemic Diseases Act, for the purpose of securing a record of the arrival at their homes of all travellers from infected areas who are not, owing to their suspicious appearance, detained at the inspection station, and a prompt report of any suspicious case that may occur in the village in which they live.

10. We have issued some additional instructions for the purpose of preventing the spread of infection. In a letter, No. 970, dated the 16th instant, a copy of which is enclosed,* we have directed the Government of Bombay to cause all dirty and suspicious luggage to be disinfected at a railway station near the frontier of the Bombay Presidency and Sind on each of the railway lines leading from these Provinces to other parts of India. The medical officers at places where this disinfection takes place are to

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* Not reprinted.

be instructed to exercise the widest discretion so as to render it quite impossible that articles which may be contaminated shall be passed without being disinfected. Instructions are also being issued for the disinfection, by washing with a disinfectant, of all railway carriages starting from infected places. On the 21st instant we issued a Notification under the Epidemic Diseases Act prohibiting the bringing of used apparel and bedding (except when carried as the personal baggage of travellers), rags, waste paper, and used gunny bags from the Bombay Presidency and Sind into any other part of British India.

11. The Government of the Punjab have raised the question whether, in view of the occurrence of indigenous cases in Sind, the import of grain from Sind, and especially Sukkur, into the Punjab should not be prohibited. We were advised that the prohibition to export grain from Sind into the Punjab and North-Western Provinces might have serious consequences in aggravating the distress in those Provinces, and we consider that, with proper precautions, the grain trade does not add sufficiently to the danger of the spread of infection to render it necessary to incur the evils that would result from its stoppage. We have instructed the Government of Bombay that all possible precautions should be taken to prevent contaminated grain being exported from Sind, and in especial that measures should be taken to obtain immediate information of any plague cases in or near grain godowns, and to prevent the removal of grain open to the suspicion of contamination.

12. In conclusion we forward, for your Lordship's information, a copy of the regulations* issued by Local Governments and Administrations under the Epidemic Diseases Act since those which were forwarded with our last Despatch.

We have, &c.
(Signed) ELGIN,
&c., &c.

Enclosures.

TELEGRAM dated 15th March 1897.

From the Secretary to the Government of the North-Western Provinces and Oudh to the Secretary to the Government of India, Home Department.

Following telegram received from Magistrate, Jhansi: *Begins*—Sub-Inspector of Thana Rakha reports that he has heard of an outbreak of bubonic plague in village Khandraoni, Police Circle Dinara, Gwalior Native State, about 18 miles from Jhansi. A Brahmin returned from Bombay is alleged to have died and all his family, and the disease to have spread in the village. Resident of Gwalior has been informed and asked to institute inquiry. Sub-Inspector, Raksa, is also inquiring from Gwalior. Police at Raksa have been told to watch the traffic on the border. Further information will be reported to you on receipt of result of inquiries.—*Ends.* I beg medical officer may be at once deputed to go to spot and verify report, and, if true, take immediate stringent action. If on inquiry report proves true, I may have to establish cordon on Gwalior frontier and exclude all Gwalior people from entry to these Provinces.

TELEGRAM No. 962, dated Calcutta, 16th March 1897.

From the Secretary to the Government of India, Home Department, to the Agent to the Governor-General in Central India.

North-Western Provinces Government telegraphs that local authorities at Jhansi report outbreak of bubonic plague at village Khandraoni, Police Circle Dinara, Gwalior State. Resident, Gwalior, has been informed. Government of India desire that local inquiry should at once be made by Dr. Crofts. Please issue necessary orders without delay. Report should be made by telegram direct to this Department of results of his inquiry. Should it turn out that report is correct, Durbar should be urged to order immediate evacuation of village and necessary disinfection and segregation of inhabitants in temporary huts.

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* Not reprinted, except Notification appointing Poona Committee. *See* page 50.

TELEGRAM No. 963, dated Calcutta, 16th March 1897.

From the Secretary to the Government of India, Home Department, to the Secretary to the Government of the North-Western Provinces and Oudh.

Your telegram yesterday regarding reported outbreak of plague at Khandraoni in Gwalior State. Agent for Central India has been requested to depute Residency Surgeon at once to conduct local inquiry into facts. Result will be communicated to you as soon as it is known.

TELEGRAM dated 17th March 1897.

From the Secretary to the Government of the North-Western Provinces and Oudh to the Secretary to the Government of India, Home Department.

Following telegram received from Magistrate, Jhansi: *Begins*—Assistant Superintendent, Police, visited on 16th Khandraoni, Thana, Jigna, Gwalior State; reports illness with all symptoms of bubonic plague rife in village which is eight miles from nearest point Jhansi frontier; originated with Brindaban, returned Bombay, last Shankrat, about six weeks ago; since then 50 deaths in Khandraoni, a village of 600 or 700 inhabitants; 15 ill at present; two deaths yesterday; two to-day. Illness has not spread to other village. Wagle, Medical Officer to Maharaja, arrives here morning of 17th and will go out to make arrangements. Strictest orders regarding quarantine on the frontier have been issued.—*Ends.* Lieutenant-Governor's reply to Jhansi Magistrate: *Begins*—It is evident that entire village is infected; suggest to Gwalior Medical Officer immediate evacuation of entire village by population, who should be camped in open under shelter chappars, the members of infected families being segregated from rest. Strict cordon should be established round inhabitants for 15 days. To prevent straying to other villages, nominal roll should be made out and muster called night and morning. Provision for food, water-supply should be made. Village Khandraoni should be completely burnt. If Gwalior authorities do not agree to this, all kutcha houses should be unroofed and all inflammable property of infected houses burnt, floors dug up and all houses thoroughly limewashed inside and outside. No house should be re-occupied for 15 days. I am sending copy of this telegram to Resident, Gwalior.—*Ends.* In forwarding copy of above to Resident, Lieutenant-Governor's telegram begins: Lieutenant-Governor trusts you will consider the extreme seriousness of this matter sufficient excuse for his begging of you to insist on the instant adoption of the measures suggested. Nothing less affords sufficient hope that plague may not spread generally from Khandraoni. Quarantining entire population of village absolutely essential; no one should be permitted to enter or leave.—*Ends.* Lieutenant-Governor begs that Gwalior Darbar may be compelled forthwith to act as suggested and that Resident himself may see to full execution of the orders. His Honour would be glad if Resident were instructed to inform this Government of progress of events for purposes of this Government only.

TELEGRAM No. 2767, dated 18th March 1897.

From the Agent to the Governor-General, Indore, to the Secretary to the Government of India, Home Department.

Your telegram 962, Sanitary, dated 16th March. Resident, Gwalior, reports that two Brahmans from Bombay died of plague at Khandraoni two months ago, and since then about 40 villagers have died. Three cases of undoubted plague were found in village yesterday, and some others with fever and pneumonia. Arrangements made to isolate villagers. Surgeon-Major Crofts is now at Khandraoni and will submit further reports direct.

TELEGRAM No. 998, dated Calcutta, 18th March 1897.

From the Secretary to the Government of India, Home Department, to the Agent to the Governor-General in Central India.

Following received from North-Western Provinces: *Begins*. . . *Ends.* Government of India trust that you will (if medical officer confirms report as to plague) do all in your power to carry out suggestions of Lieutenant-Governor for immediate isolation of all population of Khandraoni in segregation camp and for destruction of infected houses and disinfecting of rest of village in manner proposed. It is desirable that search should be made in surrounding villages and any cases of plague or suspicious cases isolated at once. Please direct Resident to inform North-Western Provinces Government of progress of events.

TELEGRAM No. 2804, dated 18th March 1897.

From the Agent to the Governor-General, Indore, to the Secretary to the Government of India, Home Department.

Your telegram 998 of March 18th. I can assure Government of India that already in anticipation that Maharaja Scindia has already sanctioned the whole of the measures suggested by his Honour the Lieutenant-Governor, North-Western Provinces, for dealing with outbreaks of plague at Khandraoni.

TELEGRAM No. 1021, dated Calcutta, 19th March 1897.

From the Secretary to the Government of India, Home Department, to the Chief Secretary to the Government of the North-Western Provinces and Oudh.

In continuance of my telegram 963, dated 16th, following telegram*, dated 18th, received from Agent, Governor-General, Indore: *Begins* . . . *Ends*. Also following telegram,† dated 18th: *Begins* . . . *Ends*.

TELEGRAM dated 21st March 1897.

From Surgeon-Major CROFTS, Khandraoni, Gwalior, to the Secretary to the Government of India, Home Department.

Morning plague report: Admitted none; discharged none; died none; remaining eight.

TELEGRAM dated 21st March 1897.

From Surgeon-Major CROFTS, Khandraoni, Gwalior State, to the Secretary to the Government of India, Home Department.

Epidemic at Khandraoni. Bubonic plague imported from Bombay. Population 436. Cases since 12th January 59; of these 47 died. Date of last fatal case 15th March. I arrived on 18th. Morning report: admitted 11; discharged none; remaining 11. On 19th admitted one; died none; discharged none; remaining 12. 20th admitted none; discharged to convalescent camp 4; remaining 8. Measures taken: village emptied of inhabitants, segregation camps surrounded by sentries; roll call twice daily, when every man, woman, and child is inspected; houses in which plague has occurred and those in vicinity burnt down; segregation must last. Chain of sentries (Maharaja's troops) placed around it. Four segregation camps formed—1st, of those in good health, amongst whom no case occurred; 2nd, those in good health, but amongst whom cases have occurred; 3rd, for convalescent; 4th, hospital. Orders issued to villages within 10 miles radius, prohibition from coming to or admitting persons from Khandraoni. Villages also being inspected and appear free from disease, for at least three weeks from date of last case. Meanwhile villages will be thoroughly disinfected and cleansed. Morning report will be telegraphed daily.

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* No. 2767, dated 18th March 1897. † No. 2804, dated 18th March 1897.

TELEGRAM dated 21st March 1897

From the Agent to the Governor-General, Indore, to the Secretary to the Government of India, Home Department.

Dr. Crofts is at Khandraoni making arrangements for stamping out bubonic plague. He arrived on 19th. To Resident: *Begins*—Undoubted plague at Khandraoni; am taking all precautions; 57 cases since 12th January; 45 deaths. No fresh case to-day. Communication with Jhansi stopped by cordon.—*Ends*. On 20th, Crofts wires to Resident: *Begins*—Am at Khandraoni and remain till plague is stopped.—*Ends*. Resident goes Khandraoni to-morrow to assist Crofts and arrange for regular report.

TELEGRAM dated 22nd March 1897.

From Surgeon-Major CROFTS, Khandraoni, Gwalior, to the Secretary to the Government of India, Home Department.

22nd March. Morning plague report: Remained eight; admitted none; died two; remaining six.

TELEGRAM dated 23rd March 1897.

From the Medical Officer to the Maharaja Scindia, Khandraoni, Gwalior State, to the Secretary to the Government of India, Home Department.

23rd March. Morning plague report: Remained six; admitted one; discharged none; remaining seven.

TELEGRAM No. 2952, dated 23rd March 1897.

From the Agent to the Governor-General in Central India to the Secretary to the Government of India, Home Department.

Following from Resident, Gwalior, dated 22nd March: *Begins*—Visited Khandraoni again yesterday. Crofts has made most complete and excellent arrangements as wired to you and have no fresh cases for two days, and only six in hospital. Search and inquiry up to date has failed to detect any suspicious cases in adjoining villages. I have telegraphed steps taken and circumstances to Lieutenant-Governor, North-Western Provinces, and said I thought total stoppage of Gwalior traffic with Jhansi was now unnecessary.—*Ends*.

TELEGRAM No. 2996, dated 24th March 1897.

From the Agent to the Governor-General in Central India to the Secretary to the Government of India, Home Department.

Following from Resident, Gwalior: *Begins*—Lieutenant-Governor, North-Western Provinces, considering that precautions are sufficient has ordered removal of cordon on Jhansi border.—*Ends*.

TELEGRAM dated 24th March 1897.

From the Medical Officer to the Maharaja Scindia to the Secretary to the Government of India, Home Department.

24th March. Morning plague report: Remained seven; admitted none; discharged none; remaining seven.

Mahamari, or the Plague, in British Garhwal and Kumaun.

1. The plague, *Pestis septica*, Syrian, Levantine, or Egyptian plague, the Bubonic plague of Western China, and Gola or *Phutkiya rog* and *Mahamari* of British Garhwal and Kumaun are doubtless one and the same disease, which has existed in all probability in the hill tracts of India and China from time immemorial.

2. The disease, so far as history records, was prevalent in Europe in the sixth century, B.C., and is said to have spread at this period over the greater part of the habitable globe; and since then it has been recorded in Syria, the Levant, Egypt, and elsewhere. Dale Ingram published an historical account of the disease as far back as 1755. Moscow was the scene of an outbreak in 1770, and in 1813 the disease prevailed at Malta, and in 1834 at Cairo.

In India the disease has ever had a home, and prevails off and on till the present day in British Garhwal and Kumaun. In 1813 the plague was present in Central India and Rajputana, Kutch and Kattywar, and was first noticed at Kumtakole, and spread throughout Wagar during January, February, and March 1816, and by the end of that year had extended to Scinde where the mortality was great. The disease was still prevalent in Central India in 1819 and disappeared in 1821. Nothing more was heard of the disease in Central India till July 1836, when it broke out at Pali, a town of Marwar, whence it spread to Jodhpore. It prevailed at Deoghur in Meywar in March 1837, and thereafter extended to Jalia and Rámghat in the district of Ajmere. The disease all but disappeared towards the end of 1837, but in November of that year it again broke out in epidemic form at Pali, and continued till February the following year.

It is more than probable that the plague was introduced into Pali and Rajputana in 1837 from the Levant, as the "Chhipis," who printed the pieces of plain cloth brought from the coast from Bhownagar and Surat, were the first affected.

3. The Himalayan districts of the North-Western Provinces in which the disease occurs comprise:—

(1.) Garhwal bounded on the north by Tibet, on the east by Kumaun, on the south by Bijnor, and on the west by Tehri and Dehra Dun; and

(2.) Kumaun now divided into two revenue districts, Almora and Naini Tal, bounded on the north by Tibet, on the east by Nepal, on the west by Garhwal, and on the south by the Tarai.

These contiguous districts lie between north latitude 28° 14′ 15″ and 31° 5′ 30″, and east longitude 76° 6′ 30″ and 80° 58′ 15″, and embrace an area of 11,038 square miles.

4. The population numbers close on 1,000,000 souls with an average of 72 to 76 persons to each square mile, living at elevations from 1,500 to over 11,000 feet above sea-level. For practical purposes the entire population may be classed as Hindu, as very few Musalmans, &c. are natives of the hills. The greater proportion of the population live at from 3,000 to 6,000 feet above sea-level overlooked by the crowning peaks rising from 20,000 to over 25,000 feet of the great Himalayan range.

5. Outbreaks of the plague in these Himalayan hill tracts, the most mountainous in the world, are of two kinds—

1st, spontaneous outbreak;
2nd, outbreaks caused by importation of the disease.

Spontaneous outbreaks are frequently associated with, and sometimes preceded by, a great mortality among rats, mice, and other rodents, &c.

6. The plague or pestilence of the hill tracts is distinguished from all other fatal febrile malignant diseases by its extreme virulence, rapid course, fatality, and by the enlargement of the lymphatic (inguinal, axillary, cervical, &c.) glands, the characteristic lesion of the disease when death does not ensue within the first three days from extreme virulence and direct shock of the great nerve centres. It has the shortest period of incubation probably of all known diseases, and it may prove fatal within 24 to 48 hours after exposure to infection, and there is clear evidence that the disease is communicable from the sick to the healthy.

7. The disease appears ever and anon in village or hamlet situated "on precipitous mountain side in gorges reached only by means of a cradle swung on a rope above a boiling flood of snow water low down in a hill valley, in secluded spots reached by dubious pathways winding up a wooded glen starting from the river far below, or

"upland slope close to the sources of a river formed by a waterfall, in secluded places, "wilder it would be hard to find in all the hills reached by a footpath winding over a "high mountain and near where the Margari stream arises in cuplike valley surrounded "by high mountains, on a spur hillock-shaped, on the slopes of opposing mountains, on "hills of moderate height, in bends of a river hemmed in by the hills, on three sides on "the brow of a hill which stands out from the mountain behind it, on the slope of a "great mountain overlooking the valley in which the river runs, on green hillock "backed by high mountains, and on a spur of rocks jutting into a narrow valley," overlooked by the highest Himalayan peaks capped with the eternal snow. Here, where the atmosphere and climate are the finest and purest in the world, and at heights where the germs and microbes of disease are kept within a narrow sphere, exists a disease which in its infectious nature and fatality surpasses all others in virulence, and ever threatens to break bounds and spread and be disseminated far and wide as in past times throughout Christendom. Cholera spares of the household, but the plague often reaps each one of the many members of the upland home. So dreaded is the disease, that family ties in its presence are suddenly broken, and the father and mother flee from their children and abandon each other, seeking the lone mountainside in despair for a time of all human association.

8. The earliest record of the disease in the hill tracts is embodied in a report, dated 25th April 1836, by Mr. Gowan, the Commissioner of Kumaun, in which it is stated that *mahamari*, which was thought communicable by contact with articles in use in an infected tract, first appeared at Kedarnath in 1823. It originated, it was affirmed, in the person of the rawal or the high priest of the celebrated temple there, who having in that year deviated from the rules prescribed in the Shastras for the performance of the religious ceremony called the "Hom," was smitten with this new form of disease and died together with the Brahmans who assisted at the offering. From Kedarnath the disease spread to the villages in religious assignment to the temple, and afterwards appeared in other parganas of Garhwal. Others said that the disease came into existence for the first time at the Hardwar Fair.

9. In 1834-35 the appearance of the disease in the parganas of Nagpur and Badhan Garhwal was preceded by a great mortality among the rats in a village. The disease was characterised, it is stated, by fever terminating fatally in two, three, or four days, and associated with an eruption of buboes or swellings.

10. During 1837 the disease was alarmingly prevalent in the pargana of Badhan along the higher parts of the Pindar river, and in 1846-47 it found its way to the sources of the Ramganga and almost entirely swept away the population of Sarkot, situated at 7,000 feet on a high easterly spur of the great mountain Duder Ka Toli in patti Lobha, and also to a village near the source of the Kosi in patti Boraran, Kumaun proper. In 1847, a village, 15 miles west of Almora, situated among the pine forest of Siyahi Devi range, was attacked, and in the latter end of 1848 a few villages along the fatal line of the Pindar river were threatened with a return of the disease. During the rainy season of 1849 it broke out with great virulence in patti Chaprakot, pargana Chadpur, and proved very fatal in the villages of Marora and Dadoli, and the Senior Assistant Commissioner of Garhwal, Mr. Strachey, now Sir John Strachey, in a report, dated 22nd December 1849, gave particulars of the outbreak. Mr. Strachey writes: "For about "30 years past there has existed in Kumaun and Garhwal a disease known by the "local name of *mahamari*, apparently identical with the plague of Syria and Egypt, "the characteristic symptoms being violent fever of the most contagious nature, always "accompanied with swellings in the armpit, the disease ordinarily seeming to reach its "crisis on the third day."

11. Dr. Renny on the 9th May 1850 commenced a local investigation into the disease at Dadoli village, patti Chaprakot, and saw two cases on the 10th and two more cases on the 13th. He described the disease as an infectious fever of a malignant kind and of a typhus character, accompanied by glandular tumours and generally terminating in death in three or four days. The mortality from the disease in 1849-50 was 113 in nine villages.

Mahamari was again prevalent in 1851, and in a joint report on the disease dated 1st December 1851, by Dr. Pearson and Sub-Assistant Surgeon Sri Nath Mukerji, it is described as a typhus fever of contagious and infectious type. In a subsequent report, however, dated 17th May 1852, on the continuance of the disease into April and May, these officers after extended observations recorded the opinion that the disease was plague, associated with characteristic glandular swellings and distinctly contagious in its nature. It still existed in August of that year. There was an ascertained total of 633 deaths during the epidemic of 1834–35, and in 1851–52 567 deaths were recorded in 77 villages.

In 1852–53 Drs. Francis and Pearson were actively engaged in the investigation of the disease and recorded the *post-mortem* appearances in four cases of which the principal were congestion of the brain, a diseased condition of the blood and effusion into the serous cavities.

12. *Mahamari* descended to the plains as late as 1853. In that year it appeared in an epidemic form in the towns of Thákurdwara and Afzalgarh, and in the district of Moradabad. Dr. Steven, Civil Surgeon of the district, reported on this outbreak in the plains. “It seems,” he states, “that in December 1853 Ali Baksh, a resident of Mehidpur, a village in the Bijnor district between Thákurdwara and Afzalgarh, where the disease was prevalent at the time, went to the latter town to see a *nautch,* that he returned to his home in Mehidpur; and that three days afterwards his brother Muhammad became ill and died on the third day of his illness. Ali Baksh's cousin also took ill and died in three days, having had as described to me swellings of the glands in the groin. Ali Baksh's wife and sister living in the same house also died.” Dr. Steven attributed the origin of the disease to contagion brought by Ali Baksh in a latent form from Mehidpur. Dr. Steven referred to the fact that *paharis** brought down goods for barter to Chilkia, a very important mart near Kashipur, and surmised that the disease was introduced by hill people, in intimate intercourse with the people of the district.

The disease was very prevalent also in Kashipur early in 1853, and lingered in the Moradabad district till 1854. Dr. Steven saw a few cases which were characterised by high fever and swelling of the glands of the right groin or of the armpit. It also prevailed in Rampur at this time; and it is stated that about 8,000 deaths occurred from the disease.

Dr. Steven's conclusions were—

(1) that *mahamari* is identical with the incomplicated or simple form of glandular plague as found in Egypt;

(2) that it can be conveyed to any town by contagion, and be propagated by endemic causes as filth, bad ventilation, poverty, and uncleanliness of the inhabitants.

13. In September 1859 *mahamari* again broke out in the northern parganas of the hill tracts, and in 1860 it was noted that close upon 1,000 persons had died of the disease.

An outbreak of the disease occurred at Sarkot on 20th September 1870, and continued till the 9th of November.

14. Dr. Richardson in a report, dated 4th October 1875, on *mahamari* at Siti, patti Danpur-Bichla, after stating that the last of six cases occurred on 9th September, says that the first victims were a little girl aged 8 and her father, Kusalli, aged 30. They were attacked about 1,000 feet above the village of Siti and near the edge of the oak forest. Both were seized with fever, vomited once or twice, had large swellings in the groins, and both died on the fifth day after seizure. The bodies were thrown into a stream below. On the day the bodies were disposed of two other persons living in the same building were attacked after disposing of the bodies and remained at Siti. They were taken or sent into the jungle and died there, and were buried were they died; but their graves must have been shallow, for their bones where afterwards found scattered about. Thus of the six deaths four were among persons occupying the same building. The two last were Gujuali, aged 45, and Dhanali, aged 45, husband and wife. The next victim was a man 28 years of age. He had severe fever for two days, when large swellings were observed in the armpits. He vomited twice during the illness like others. He died on the fifth day and his house was burnt and the body with it. The last who died was a boy Mulaki, son of Dharam Singh. He was taken ill and died about a mile from Siti in the jungle.

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* *Paharis*=hillmen.

Dr. Pearson in a report, dated 22nd June 1876, states that he inspected villages in patti Bisaud, where 50 deaths from *mahamari* had been reported.

15. In November and December 1876 the disease was prevalent in certain villages in Kumaun and prevailed in Balt and Bintola within 4 miles of Almora and within 5 miles of Rânikhet. Dr. Planck inspected 40 villages affected by the disease, and recorded 277 deaths and confirmed the opinion that the disease was the pestis or plague of medical writers, and was readily communicable from the sick to the healthy. The villages included nine in pargana Khas Parja, 12 in Bora-ki-Rao, two in Attargoli, and 17 in pargana Danpur, as follows :—

Parganas.	Villages.	Parganas.	Village.
Khas Parja	Balt.	Attargoli	Bhándárgáon.
	Bintola.		Dugorá.
	Sirár.		
	Nainoli.		
	Gajula.		
	Salla.	Danpur	Parsáli.
	Biraura.		Sungarh.
	Maichor.		Baret.
	Matoli.		Nankori.
			Sámá.
Bora-ki-Rao	Banuri.		Bándhar.
	Tanda.		Gaulá.
	Sajoli.		Bhámángáon.
	Phalianti.		Dor.
	Chain.		Chachena.
	Behta Talla.		Birtang.
	Kausani.		Darkot.
	Kajuli.		Alam.
	Mangalta.		Bothi.
	Ajula.		Basankot.
	Tailihat.		Kasiabara.
	Kururah.		Gadera.

RETURN of DEATHS from MAHAMARI, 30th June to 16th July 1877.

District.	Pargana.	Patti.	Village.	Number of Deaths reported.			
				Men.	Women.	Children.	Total.
Kumaun	Baramandal	Athagali	Bhandergaon	—	—	2	2
	Danpur	Danpur Talla	Gadera	1	1	—	2
			Total	1	1	2	4

The Commissioner of the Kumaun Division, writing under date the 19th July 1877, says the recent epidemic seems to have come to an end, and states that the area affected has been in Garhwál, the parganas of Nagpur, Chandpur, Budhan, Chandkot, and Dewalgarh, and in Kumaun the parganas of Danpur, Johar, and Baramandal, the total deaths up to date being 535.

District.	Men.	Women.	Children.	Total.	Remarks.
Kumaun	105	69	64	238	Last report, 20th June, one death.
Garhwál	199	73	25	297	Last Report, 9th July, five deaths.
Total	304	142	89	535	

RETURN of DEATHS from MAHAMARI, 3rd April to 14th May 1878.

Deaths.	Pargana.	Patti.	Village.	Number of Deaths reported.			
				Men.	Women.	Children.	Total.
Kumaun	Baramandal	Khasparja	Bhulyara	3	3	—	6
	„	„	Bintola	1	2	1	4
			Total	4	5	1	10

16. Dr. Richardson reported that typhus fever identical with *mahamari* prevailed more or less throughout the year 1884 in the Kumaun Division, and in 1885 he visited certain villages, Sirka, Rung, &c., in patti Chaudans, pargana Darma, where the disease had been prevalent.

17. In 1886 the same officer visited villages in patti Giwar, pargana Pali, in which 13 deaths took place from the same cause, and was informed on 13th October that 10 persons had died of *mahamari* in Seri, Danpur. He noted also that "a great number of deaths from *mahamari* took place in Garhwal during the year 1886." Dr. Thomson also reported on the outbreak of *mahamari*, identical with typhus fever, in April and May 1886, but the reports of these outbreaks are very meagre.

On the 28th March 1887 the disease was reported at Khatiari adjoining the military staion of Almora. On the 5th April, at Gonja Jali in Bhabar Chhakata, on 27th May, 14 deaths were reported from Bijapur village, patti Dora Mulla, pargana Pali, and on 14th June three deaths in Nakutta village, patti Tikhun Mulla. The Collector of Kumaun on the 11th October 1887 gave a summary of deaths from *mahamari* in Danpur, as follows :—

Date.	Name of Village.	Number of Deaths.
24th August to 27th September	Dasauli in Pungraun	31
30th September	Lohathal „	3
4th to 29th September	Surkali in Nakuri	7
25th to 30th „	Ghali	3
	Sungroli	1
	Total	45

Dr. Thomson, who reported on this outbreak on 13th June 1888, states that the first case at Dasauli occurred in the person of one Gungia Patak, who it is stated recovered. The first case noted in the neighbouring village of Lohathal, on the 18th September, was in the person of a resident of Dasauli. A second case took place in the same house in which two more persons died in October.

An outbreak occurred at Gangoli, Kumaun, on the 4th October.

Under date the 24th October, the following deaths from *mahamari* were reported :—

Date.	Name of Village.	Number of Deaths.
8th October	Lohathal in Pungraun	1
9th „	Dasauli „	10
15th „	Surkali in Nakuri	1
15th „	Dhari „	1
	Total	13

On the 2nd November five more deaths had occurred from the disease in Dasauli, and on the same date four deaths in pargana Chaugarkha, Salan Talla. On the 19th November 14 deaths from *mahamari* were reported between 24th and 31st October in

Dasauli village, patti Pungraun, pargana Danpur; and on the 5th December *mahamari* had again made its appearance, one death being noted in Surkali, patti Nakuri, pargana Danpur.

On 29th March 1888 two fatal cases were noted in Kaurea near Dasauli, and on 5th April a woman died of the disease in Khitauli, and on 8th idem the husband of the woman died. On the latter date a boy died in Lohathal. The house in which former cases had occurred had stood empty for some months, the owners living a short way off in chappars. But this boy knew of the existence of "*gur*" in, and was observed taking some from, the house. On May 9th two deaths occurred at Singor.

A death from *mahamari* in village Lagor, patti Pungraun, was reported on the 15th May 1888, and the disease was said to be present in Uskot and Rithagarh, pargana Chaugarkha, at same time.

Dr. Thomson, in his report of the outbreak, states that the disease was *mahamari*, *gola rog*, or *phutkia*, hill plague, or a severe type of typhus fever highly contagious and bred and fostered by filth. On the 13th September 1888 a statement was furnished by the Senior Assistant Commissioner, Garhwal, showing that five deaths from *mahamari* had occurred in Nagpur, and 16 in Dewalgarh mortuary circles, five in Badhan, and two in Nagpur.

18. The history of the disease in its incidence among the people of the hill tracts from 1887 onwards is imperfect, owing, it is presumed, to the confusion arising from adopting the view that *mahamari* and *sanjar* or typhus fever, were identical diseases.

19. No cases of *mahamari* were reported in Garhwal or Kumaun in 1889 or 1890. In 1891 six deaths from the disease occurred in patti Karakot, pargana Badhan, between 27th June and 21st July (two deaths in June and four in July). The record is blank in 1892.

20. In 1893 two limited but associated outbreaks of *mahamari* occurred in July and September in mauzas Surkali and Suni, patti Nakori, pargana Danpur, a few miles off the Bageswar-Berenag road, and about two marches from Bageswar.

The first outbreak occurred on the 8th July, and the second on the 13th September, and these outbreaks were associated, and each case was connected with, some other preceding case or cases.

The extremely infectious and fatal nature of the disease is evidenced by the fact that it was communicated direct from the sick to the healthy, and that all those attacked died.

The affected families in both outbreaks occupied houses situated in a large gently-sloping horseshoe-shaped valley, at an elevation of about 6,000 feet above sea level.

The houses in the locality are dotted round the upper margin of an extensively cultivated and terraced area, and form no collection that can be called a village.

The families affected were comparatively well-to-do people, and poverty or destitution had nothing to do with the outbreaks. The site and natural surroundings of the dwellings are exceptionally healthy, and the families undoubtedly lived in a naturally and exceptionally healthy climate, but under conditions which favoured the onset and dissemination of zymotic disease in its most intense form.

These two families occupied the end rooms of an isolated block of three houses, the centre house having remained empty for the previous six months, and the families had been resident in Surkali for years.

The first case occurred in the person of a girl whose father, it is stated, died seven years before of the same disease, and of the two whole households of Kuna Sah and Ratna Lal which were affected, all the members, numbering 11 souls, succumbed to the disease.

The scene of the second was less than a mile from that of the first outbreak, and although the occurrences were fewer, they were no less fatal.

The first case in the second outbreak occurred in the person of a man by name Tejgir, who helped to fire the infected shed where lay the dead of the disease in the first outbreak. After a certain interval he succumbed, having previously affected those about him; and a visitor from a distant village who, on his return to his home, took ill and died of the disease.

The father of the first affected is said to have died of *mahamari* seven years before; but there is no evidence to show any connexion between the events, or that the recrudescence of the disease was due to any circumstance connected with the prevalence in the same locality in 1887.

The following summary shows the dates of the occurrences and connexion between the outbreaks, and indicates the malignant character of the disease :—

Mahamari in Patti Nakori, Pargana Danpur, in 1893.

Place of Occurrence.	—	Girl.	Woman.	One Person.	Two Persons.	One Person.	Two Persons.	One Person.	One Person.	One Person.
Mauza Surkari -	Persons, Banias.									
	Date of attack,	8th July,	10th							
	Death of death,	10th July,	11th,	14th,	15th,	16th,	17th, July.	1st,	2nd,	3rd August.
Mauzi Suni -	Persons, Jogis.	Tejgir.		Monagir.		Gopalgir.		Female.		
	Date of attack,	13th September.		17th,		22nd,		22nd.		
	Date of death,	18th „		21st,		26th,		25th.		
Mauza Maghera -	Person, Jogi.	Punagir.								
	Date of attack,	13th.								
	Date of death,	15th.								

On the 17th August Tejgir helped to fire the shed in which the dead bodies lay.

Punagir visited Tejgir when the latter was ill of the fever.

The persons who succumbed in the mauza Surkali comprised the members of two whole households; those in mauza Suni were of one family, and Punagir of mauza Maghera was a caste-brother of Tejgir. Punagir visited Tejgir on the 13th September while the latter was ill of the fever, and returning to his home 5 miles away on the further side of the Pangra river, was seriously ill the next, and died the following day.

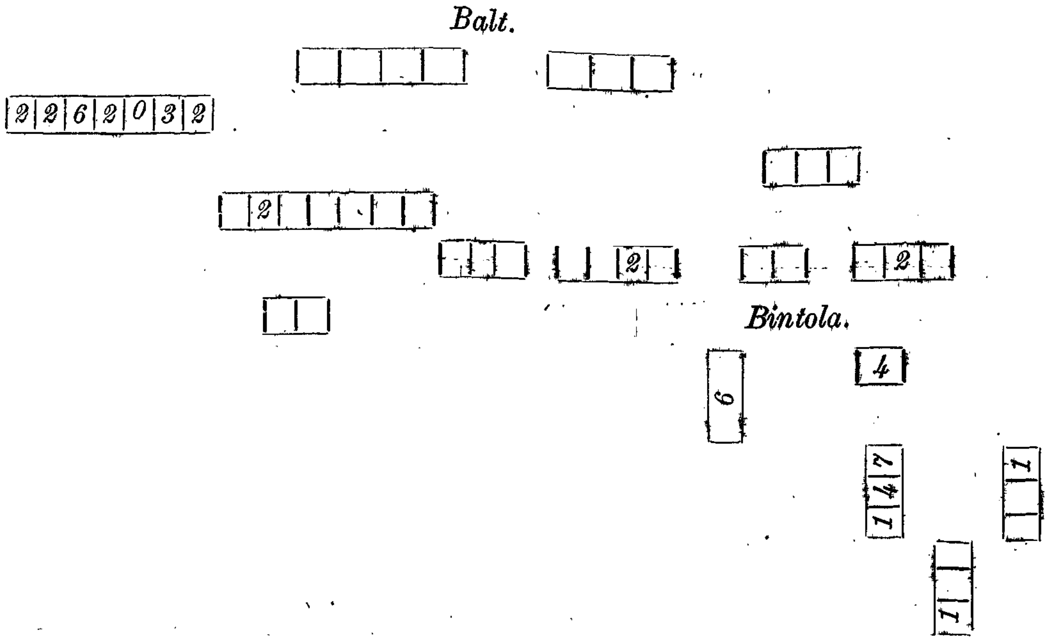
The inhabitants of Barkuri separated by a spur of a hill from Surkali vacated their village on the 22nd July on account of a great mortality among rats and mice, and an outbreak of *mahamari* was thus in all probability averted.

21. In 1894 five persons died of the disease at Ira, patti Chaprakot, Garhwal, between the 5th and 8th January, and there were two more seizures, and between the 3rd and 4th May a girl and a boy were reported to have died of the disease at Gadoli, patti Daijuli, pargana Chandpur; but Dr. Giles was of opinion that these deaths might have been due to famine fever.

22. A description of a Kumaun hamlet and the terrible effect among the people, and of the calamity which often befalls many a household on the outbreak of the plague, may be best given in the words of one who personally observed the scenes and recorded his experiences of the extended outbreak in 1876–77.

"Balt and Bintola are two adjoining hamlets situated rather low down in a valley about 4 miles north-east of Almora.

The houses are well built of stone, with solid roofs of thick hill slate. They are arranged in short terraces on the hill side, in accordance with the following ground plan, Bintola being lower placed than Balt. In the plan each square represents a house, and the figure, the number of deaths which occurred in the family inhabiting the house :—



The people of Balt and Bintola were friends ; they had intermarried, and relatives of many families lived part in Bintola and part in Balt ; and the two villages might be considered one.

Mahamari first appeared in Bintola early in November 1876, in the person of a child of the padhan or headman of the village. The child died on the third day after it sickened, and while it was sick two other children of the same family were taken ill and also died. In the two houses which formed the homestead of the padham, before the sickness commenced, there resided a family of 14 persons in all. Of these 14 persons, 13 died at intervals during November and December, all with the same symptoms of disease, commencing with shivering, quickly followed by intense fever, ending in delirium, insensibility, and death on the third or fourth day.

In the terrace of three houses adjoining the padhan's home three families resided containing a total of 14 persons. The women of these families helped to nurse the sick of the padhan's family, and during November and December 12 of these 14 persons died of the same form of disease.

At first the sick were nursed and died in the houses, afterwards the sick were nursed and died in temporary huts outside the village, and all the bodies were buried after death. In all, 31 cases of the disease occurred during November, December, and January, and 27 persons died. The four persons who recovered presented themselves to me on the 24th January for examination. All had the same appearance of extreme debility with emaciation, and one had a small bubo in the left axilla, which appeared on the sixth day of his illness seven days ago, and is now soon likely to suppurate, being hot and tender. Bubo was noticed both in the axilla and inguinal regions in some other of the latter cases, but in none of those who died quickly at the first outset of the disease. And it was only after the buboes were seen, that the people knew they were suffering from an outbreak of gola, the name given by the hill people to the disease. No appearance of bubo occurring in the first rapidly fatal cases, the people thought the disease was sanjar, a form of continued fever common amongst the hill people and frequently fatal, but believed to be less contagious, and therefore less dreaded than gola.

From the time the people vacated the site to live in temporary huts or in caves on the hillsides, only one death occurred, as will be hereafter described.

In Balt the first case occurred in the person of a woman named Bani, who had gone to the padhan's house at Bintola to assist in nursing the sick children there. She resided and died in one house of a terrace of seven in the upper part of Balt ; next her daughter died ; then four persons died in the adjoining house ; then her husband died, and the disease spread through the terrace ; so that deaths occurred in every house excepting one, which was untenanted. In all, 13 persons died in the terrace during December, and then, as at Bintola, the people of the villages vacated their houses as soon as "gola" or bubo was noticed as a symptom of the disease in those who lived beyond the fifth day. Indeed, deaths from gola being reported, the civil authorities directed the people to vacate their houses, and they located themselves in huts of grass and branches on the hillside. All remained well until, a great fall of snow occurring on the 14th of January, the people returned to their homes; and during the succeeding five days four more deaths occurred in the houses of the terrace previously affected. The people, seeing this return of sickness, fled at once to the hillside, leaving the sick, who died unattended in the houses.

The local conditions at Balt and Bintola were as follows:—Both villages were uninhabited, the former inhabitants scattered in families miserably lodged in huts or caves far off; the village cattle roaming and feeding amidst the young wheat of the cultivated terraces around and below the villages. The torn remains of 13 cows, calves, or bullocks, and five goats, scattered in different places, witnessing to the truth of the local statement that, from dread of the disease, no one dare venture on to the site to house the cattle as night approached, and that consequently leopards and hyenas were devouring the flocks.

The houses were double-storied, one room below and one above, close, unventilated tenements. The lower room was used as a cow-house, the upper room for family occupation. In the lower room, about 5 feet high, it had been customary to lodge from four to eight head of cattle or goats at night, and, indeed, in some instances as many as the room had standing place for; the only opening being the small doorway of entrance, tight closed and barred at night. These rooms were seen to be littered for about a foot in depth with decaying straw and much manure, moistened by the fluid excretion of cattle, and the entrance way on each side, and the stone platform facing the lower story were piled with heaps of manure, which had been drawn out of the lower room as necessity required, and there left for eventual removal to the land in the ploughing season. The upper room was noticed to be roughly divided by wooden slabs into a front and back portion; the former used as the family sleeping place, the latter as a granary. The doorway, and in some instances a round hole in the front, and a small round hole for the exit of smoke through the roof of the house, all commonly closed at night, being the only openings. The floor was made of thin wood, with pretty numerous cracks, so that the warmth generated by the cattle below could reach to the sleeping people above, afterwards locally described as a beneficial arrangement.

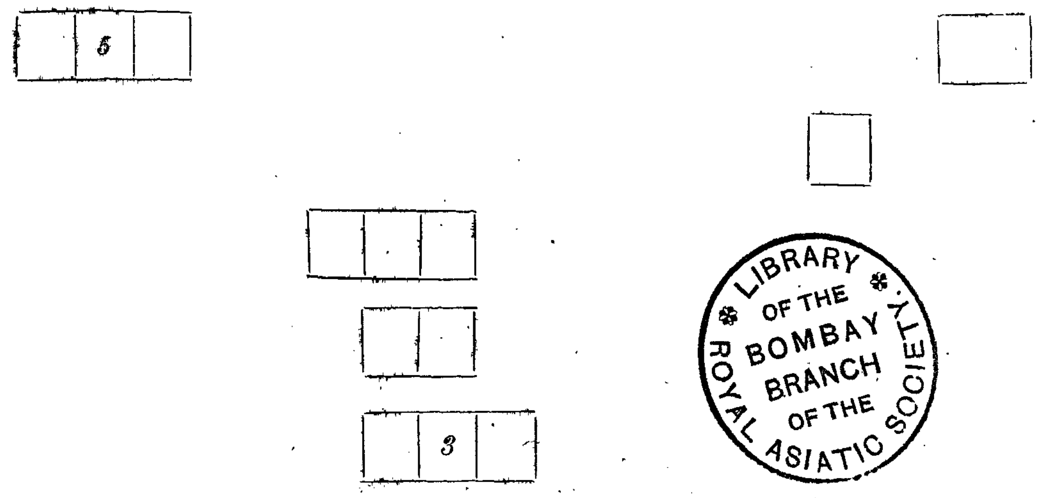
Upon the stone platform facing the terrace above mentioned lay the broken remains of the four persons who had last died, their limbs and skulls torn and scattered by jackals.

As regards the site generally, and the precincts of the village, nothing naturally insanitary could be seen. With the exception of a grove of pine trees at one place, the sharply sloping surface was clear of excessive vegetation everywhere. A mountain stream of bright water flowing between the village sites furnished an ample supply of good water for domestic purposes. Above the village sites all was clear, open rocky ground, around and below the sites almost all the surface had, by the patient industry of many years, been fashioned into narrow terraced fields, spreading down in green steps of young wheat and barley to the margin of the rocky stream flowing in the very bottom of the valley.

Alam is another village of about 12 houses, high placed in the precipitous mountainside above the Gori river. To reach it from the Gori valley side, the river, a boiling flood of snow water, has to be crossed by means of a cradle sliding on a rope, the apparatus being temporarily provided for the use of the visitor.

The houses are placed on the mountainside in the following order:—

Alam.



LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

Alam was inspected on the 12th of May 1877. In all, eight deaths in two families occurred here from gola disease, the following being the history of the outbreak.

The disease commenced in the padhan's family with the illness of the padhan's brother, who came home ill with fever from a shooting excursion on the 4th of March, and died on the 7th, swelling appearing in his groin before he died. In this family the wife of another brother and her child died during the period between the 7th and 23rd of March, and in both cases bubo appeared as a symptom.

The man who first died lay sick, was visited several times by a man who had recently come from Askot to settle with his family in three attached houses, highest placed of any in the village. This Askot man was taken ill on the 11th and died on the 16th of March, a swelling appearing in his armpit before he died. He died in his house attended by his wife, who buried his body just outside the house door. Three days after he died his wife was taken ill, and died after four days' illness; and her body was left in the house unburied. The five remaining members of the family, four boys and one girl, fled to a neighbouring hut, where they lived together for a few days, the eldest, a boy of 14, acting as head of the family and providing food for the rest. This boy feeling himself ill, returned into the house alone and died, his body also remaining in the house. Four children remained, the eldest, a girl of nine named Danuli, and her three brothers aged respectively 7, 5, and 1½ years. Danuli worked for and fed them all for a few days, and during this period the boy of 7, wishing to take honey from a hive in the house, entered it with burning straw or wood to drive the bees away. Either from carelessness or as the result of fright at seeing the dead bodies, he set the house on fire; and all three tenements were burnt down. A few days after the house was burnt down, the boy of seven was taken ill and died in the hut; and his death was followed by that of the boy of 1½ after an interval of some days. So that Danuli and one brother only were left.

Before reaching the village on the 12th of May I had been informed that possibly children might be found there abandoned. The village was found empty and desolate, and Danuli and her brother were found near the place of temporary abode outside the village, the former, a bright-eyed little girl dressed in an old petticoat, the latter a little urchin wrapped in a piece of old blanket. These children had lost their parents on the 20th of March, and from that date had been thrown on their own resources, except for a few days while the elder brother lived, for no person of the village would approach them.

The girl Danuli recounted, in disjointed sentences, her experiences of the past eight weeks, explained how her father, mother, and big brother had died; how all the people ran away out of sight; how the house had been burnt; how her brother of seven had died and his body been carried away by jackals in the night time; how she had buried her little brother of 1½, taking the body in a basket and digging a trench for it with a pick; and lastly, how she had been left only with the remaining brother husking and cooking rice for both every day, leading her brother down to a stream to drink, and sleeping with her arms about him every night. Even now that so long a period had elapsed since the last person had died, no native person present would approach these children, who sat hand-in-hand, apart, as the girl told her pathetic tale of suffering and endurance.

The two children were taken down the mountainside to a stream in which they were washed, their clothing was burnt, and they were re-clothed and provided with blankets. Afterwards they were passed in the cradle across the Gori, and given in charge of their grandfather, who was much moved at sight of the children and promised to care for them in his village on the mountain opposite Alam.

Such is the history of many a household during the occurrence of the plague, which exists to this day in British Garhwal and Kumaun.

23. The ever-recurring recrudescence of the plague in this portion of the Himalayas may be ascribed to the ingemination of a specific poison, and its spread by fomites and other means through neglect to destroy article, &c., likely to convey and retain infection for long periods, and to the imperfect burial of the dead in epidemic and at other times. The accidental uncovering of a grave, disturbance of soil, &c., or the unearthing of a long-neglected or hidden household article may undoubtedly let free the specific poison just as the special communicable poison of scarlatina, small-pox, &c., may be wrapped up in a dirty rag or other article for years.

24. The cause of the disease, however, is still obscure. It has been ascribed by [illegible] Watson to the eating of diseased grain, especially to the use of "mandua" (Eleusine [illegible]), and the fact that rats and mice have access to grain stores and die of the [illegible] prior to the outbreak among the people seems to have confirmed him in

his belief, strengthened by the supposed fact that a quantity of diseased mandua sent from an infected village to be ground at a water-mill caused the death of all rats about the mill. Others have ascribed the disease to the use of chua (Amaranthus frumentaceous), and it is where this grain is chiefly used or forms the staple food of the people that the disease first breaks out. However, Doctors Francis and Pearson have pointed out that the villagers on abandoning an infected village take their supplies of grain with them, and that the pestilence is usually stayed, although the food-supply is the same as when the people occupied the infected locality.

Doctors Francis and Pearson fully investigated the point and satisfied themselves that Doctor Watson's supposition could not be supported by properly authenticated facts.

25. Light has lately been thrown on the etiology of the disease by investigations into the occurrence of the recent epidemic at Hong Kong. The confirmation of the fact that a special organism exists in the blood and tissues of those affected by the disease seems to indicate that a special bacillus is the cause of plague. The demonstration of its abundance in the inguinal glands of the affected and of the rapidly fatal effect of the inoculation of the micro-organism (an encapsuled diplococcus, difficult to strain by the usual re-agents but easy to cultivate on gelose) on rats, mice, and guinea-pigs would seem to point to a definite conclusion. It only remains for us in the North-Western Provinces on the next appearance of the disease in the Himalayan hill tracts to confirm such conclusions, by demonstrating the presence or non-presence of the newly discovered bacillus in connexion with the disease as it occurs among the people of British Garhwal and Kumaun.

26. Mahamari has been fostered by the uncleanly and filthy habits of the people of the hill tracts, who house cattle, sheep, goats, and other animals on the ground floors of their unventilated houses, and allow accumulations of sewage, refuse, and litter in the immediate vicinity. They also defile and pollute the neighbourhood of the village in defiance of all sanitary law, and in their helplessness permit refuse and noxious weeds to fill the air with rank odours, adding to the foul emanations that penetrate every nook and corner of the overcrowded impure dwelling which forms a nursery of zymotic disease and is the birthplace of the pestilence.

27. The remedial and preventative measures, as embodied in the rules for the prevention of mahamari, comprise:—

(1.) The housing of all cattle, goats, sheep, &c., in sheds at a distance of not less than 50 feet from the village, the sheds being located below the village if possible.
(2.) Attention to the ventilation of houses and the prevention of overcrowding by the distribution of families in different rooms.
(3.) The prevention of nuisances in or near the village.
(4.) The clearances of accumulated filth, manure heaps, and rank vegetation from within and around the dwelling-houses.
(5.) The preservation of the water supply from pollution and contamination.
(6.) The evacuation of infected houses and of the village on the death of rats or mice in observable numbers or on the occurrence of the disease among the people.
(7.) The destruction by burning of bedding, clothing of the infected, and the proper cremation of the dead of the disease; and
(8.) The destruction by fire of the house, together with any article likely to convey or retain infections in which a death from mahamari has occurred.

28. Continued immunity from mahamari in an epidemic form makes the rising generation, as Sir Henry Ramsay wrote in 1882, under-estimate the danger "arising from the continued presence of this preventible disease."

It is still necessary to emphasise the need for increased watchfulness and for maintaining the strictest sanitary precautions to prevent the disease from assuming undue proportions in the hill tracts. Otherwise its incidence might even yet prove disastrously fatal among the overcrowded communities of our hill sanitaria, within a few miles only of the locality of the ever-recurring pestilence.

G. Hutcheson, M.D.
Sanitary Commissioner, North-Western
Provinces and Oudh.

TELEGRAM dated 5th March 1897.

From the Secretary to the Government of the North-Western Provinces and Oudh, Judicial Department, to the Secretary to the Government of India, Home Department.

Nine cases of plague reported from north of Garhwal district, of which five were fatal. These are evidently local cases of mahamari not connected with bubonic plague prevalent elsewhere.

TELEGRAM No. 897, dated 10th March 1897.

From the Secretary to the Government of India, Home Department, to the Secretary to the Government of the North-Western Provinces and Oudh, Judicial Department.

Your telegram dated 5th reporting nine local cases mahamari from north of Garhwal district. Please have careful watch kept and keep Government of India informed by telegraph of any further cases.

TELEGRAM dated 15th March 1897.

From the Secretary to the Government of the North-Western Provinces and Oudh, Judicial Department, to the Secretary to the Government of India, Home Department.

Kahar left Karachi about 7th; illness detected in train by plague inspector on 10th; died of plague at Bareilly on 12th. Eight more cases mahamari in Garhwal; six fatal. Letter follows.

No. 171, dated 16th March 1897.

From W. H. L. IMPEY, Esq., Secretary to the Government of the North-Western Provinces and Oudh, Judicial Department, to the Secretary to the Government of India, Home Department.

In continuation of my telegram of the 5th instant, I am directed to say that eight (8) nore cases of plague (mahamari) have been reported from the same locality in the Garhwal district. The necessary measures have been taken for the segregation of the nhabitants.

2. As the village lies near Okhimath on the main route of pilgrimage from Hardwar o Kedarnath, the Lieutenant-Governor and Chief Commissioner has taken steps to liscourage such pilgrimage so far as possible. At this time of the year many of the pilgrims who assemble at the Hardwar fair proceed at its close to the shrines of Kedernath and Badrinath in the north of the Garhwal district. A sketch map of the locality is enclosed. Taking Okimath as the centre of the affected area, it will be necessary to prevent access to it by posting guards at various places on the roads leading to it, more especially at Rodeprayag, Karnprayag, Chamoli, and Kedarnath. This will leave a road open to Badrinath *viâ* Joshinath, but in view of the prevailing scarcity and dearness of provisions, pilgrims will be warned that it will be better to abstain altogether from entering Garhwal.

NOTIFICATIONS No. $\frac{1272}{765\text{-P.}}$

General Department, dated Bombay Castle, 9th March 1897.

In exercise of the powers conferred by sub-section (1) of section 2 of the Epidemic Diseases Act, 1897, and of the powers in this behalf conferred by the Governor-General in Council under section 2, sub-section (3), of the same Act, the Governor in Council is pleased to direct as follows:—

1. The following gentlemen are constituted a Committee for the purpose of carrying out, under the orders of Government, the measures to be taken to suppress and prevent the spread of bubonic plague within the limits of the city and suburban municipalities of Poona and the Poona Cantonment:—

Mr. W. C. Rand, I.C.S., Chairman.
Lieutenant-Colonel C. R. Phillipps.
Surgeon-Captain W. W. O. Beveridge.

2. For the purposes of plague operations, the Committee shall exercise authority and control over the whole establishments of the city and suburban municipalities of Poona and the Poona Cantonment Committee. They may add to those establishments to such extent as they think necessary and may remove from them any persons whom they consider unfit for their posts.

3. The Committee may temporarily either rescind, suspend, alter, or modify any bye-law, rule, or order already made or issued by either of the city and suburban municipalities of Poona or the Poona Cantonment Committee, or by any Committee appointed by either of the said bodies, to such extent as they consider necessary or advisable in order to suppress and prevent the spread of the plague.

4. The Committee may incur such expenditure out of the funds of the municipalities and the Cantonment Committee as they may consider necessary for the performance of their duties, and in order that sufficient funds may be available for plague operations they may control the expenditure of the municipalities and the Cantonment Committee on objects unconnected with the plague.

5. The Committee may cause any building or enclosure to be entered and searched for the purpose of ascertaining whether any of the inmates or occupants are suffering from the plague or whether any corpse is concealed therein, and may cause any persons found therein to be examined in order to ascertain whether any of them are suffering from the plague. They may further cause any person to be detained for medical examination, and segregate, in such place as they may appoint for the purpose, any person found or suspected, after examination by a medical officer, to be suffering from the plague.

6. If the Committee have reason to believe that any building is or has recently been occupied by a sufferer from the plague, or that any death which has not been certified by a medical officer holding Her Majesty's Commission, or some other medical officer empowered by the Committee to certify in this behalf, to be due to some cause other than the plague, has occurred in any building, the Committee may cause the inmates of such building to be segregated in such place as they may appoint for a period not exceeding 10 days, and may prevent such building from being used as a human habitation in the meanwhile.

7. If the Committee are of opinion that any building is in such an insanitary condition as to be unfit for human habitation, they may prohibit the further use of such building as a dwelling-house.

When such prohibition has been made, no owner or occupier of such building shall use or suffer the same to be used for human habitation until the Committee give him permission in this behalf.

For the purpose of enforcing this regulation the Committee may, if necessary, forcibly remove or cause to be removed any person from such building.

8. If it shall appear to the Committee that any building used as a dwelling is so overcrowded as to endanger the health of the inmates thereof, they may by written order require the owner or occupier of the building, within a period to be fixed by the Committee, to abate the overcrowding thereof by reducing the number of inmates thereof.

For the purpose of enforcing this regulation the Committee may, if necessary, at the expiration of the time prescribed in the written order forcibly remove or cause to be removed such and so many of the inmates of the building as shall seem to them proper.

9. In the case of any building ordered to be vacated under Rule 6, 7, or 8, and in the case of any other building or enclosure which may appear to them to be in a filthy or insanitary condition, the Committee may require the owner or occupier to carry out, or may of their own motion carry out, such measures as may seem to them necessary for the purpose of cleansing, ventilating, or disinfecting such building or enclosure, and for the purpose of such cleansing, ventilating, or disinfecting may, if necessary, forcibly break open and enter any such building or enclosure, and may remove and disinfect or destroy any articles found therein.

10. The Committee are empowered to remove or burn any huts or temporary erections in which a case of plague is believed by them to have occurred.

11. The Committee are empowered to make regulations, when they deem necessary, for the purpose of enforcing burial in certain places or at a certain depth and for requiring that quicklime be placed with the corpse; and may prohibit the burial or burning of corpses of persons reasonably supposed to have died of the plague in or upon ground other than that specially assigned by them for such purpose.

12. The Committee may for the purpose of military camps, segregation camps, hospitals, burial grounds, warehouses, or offices, take possession of and occupy any vacant ground or building either within or without the limits of the city and suburban municipalities of Poona and the Poona Cantonment, such compensation being afterwards made to the owner or occupier thereof as may be awarded by a Panch constituted as provided in Rule 13.

13. For property destroyed under Rule 9 no compensation shall be payable to the owner. No property shall be destroyed under Rule 10 until the value of it has been assessed by a Panch consisting of the Poona City Magistrate and two other members appointed by him. The award of the Panch shall be final and conclusive.

14. The Committee are empowered to temporarily impress carts or other vehicles ordinarily let for hire with the beasts necessary to draw them and labourers or coolies, and to make payments for the same at rates fixed by the Committee.

15. The city and suburban municipalities of Poona, the Poona Cantonment Committee, and all the officers and servants of those municipalities and of that Committee, and all public servants and all persons employed by the Committee, shall carry into effect, without delay, any measures which may be ordered by the Committee.

16. On the requisition of the Committee, the District Superintendent of Police, Poona, shall give such assistance as may be necessary in order to enforce immediate compliance with any order of the Committee.

17. The principal occupant of a house or building or the principal surviving member of a family shall give immediate information to the secretary of the municipality or cantonment within the limits of which the house or building is situated of the occurrence in the house or building or amongst the members of the family of—

(a) any sickness due or likely to be due to plague;
(b) any death, whatever may be the cause of it.

18. On receipt of information of any death, the secretary shall immediately register the death and give the informant a certificate that the death has been registered.

19. It shall not be lawful to carry any corpse to the place of cremation or burial unless the bearers are in possession of a certificate given under Rule 18 that the death has been registered. In the event of a corpse being carried in contravention of this rule all persons acting under the orders of the Committee and all policemen on duty are empowered to demand the name, sex, age, caste, and residence of the deceased and to detain one of the funeral party until the information is truly given.

20. All expenses incurred in carrying out any of the measures hereby authorised shall, in the first instance, be paid out of the municipal funds of the city and suburban municipalities of Poona and the Poona Cantonment Fund in such proportions as the Committee may determine, but the Committee may recover from any person any amount which such person would, under similar circumstances, be liable to pay to either of the said municipalities or to the Cantonment Committee under any law for the time being in force.

21. The powers conferred upon the Committee by these rules may be exercised by such persons as they may from time to time empower in that behalf. All persons so empowered will, however, act subject to the control of the Committee.

22. Disobedience to any orders issued under these rules by the Committee or any person acting under their authority will subject the offender to a prosecution under section 188, Indian Penal Code.

DeC. Atkins,
Secretary to Government.

From the GOVERNMENT OF INDIA to THE SECRETARY OF STATE FOR INDIA.

(Sanitary No. 13.)

My Lord, Simla, the 14th April 1897.

In continuation of our Despatch No. 12 (Sanitary), dated the 31st March 1897, we have the honour to send your Lordship a further report on the outbreak of plague. We also have the honour to acknowledge the receipt of your Lordship's Despatch No. 42 (Revenue), dated the 11th March 1897, commenting upon the events connected with the plague up to the first week in March.

2. We are glad to be able to report that the diminution of the plague in Bombay continues. It was stated in our Despatch of the 31st March that during the nine days ending the 24th March the daily number of seizures and deaths averaged 69 and 64 respectively. During the last week in March the figures rose to 77 and 72, but from the beginning of the current month there has been a marked decline to 60 and 55 respectively. This average is less than the average for the month of January and much less than the average during February and March. During the nine days ending the 24th March the average daily total of deaths from all causes in Bombay was 163. During the last week in March the average was 162, and from the beginning of the present month it has been 142. The yearly ratio of the total mortality per mille of the population was 87 in the week ending 30th March, and 65 in the week ending April 6th. These figures show a very material decline from the highest mortality recorded, viz., that of the week ending February 9th. The yearly ratio of mortality per mille of the assumed population of the City of Bombay was on the figures then recorded 119·65, and, considering that the actual population has been augmented since then by the return of a number of those who had left the town, the facts are even more favourable than the figures indicate. The situation in the Bombay Presidency proper is summed up in the telegram sent by his Excellency the Governor of Bombay to your Lordship on the 7th instant. In Poona, the Palanpur State, and the districts of Thana and Surat it remains much the same, but in the district of Kolaba there has been a considerable increase in the number of indigenous cases. Some indigenous and infected cases continue to occur in other places in the Bombay Presidency and in the Baroda State, but the disease has not obtained a hold on any fresh places.

3. In Karachi there has been a marked decrease in the number of cases in the trans-Lyari quarter of the city and a marked increase in the Keamari quarter, and a few cases have occurred in and about cantonment limits. The total average number of daily seizures and deaths has somewhat diminished. During the nine days ending the 23rd March the numbers were 37 and 29 respectively, during the week ending the 30th March they were 37 and 28, during the week ending the 6th instant they fell to 34 and 26, and during the first 11 days in April to 28 and 22. A systematic house-to-house visitation has been inaugurated and the stringency of the general preventive measures has been increased. A statement of the Karachi health camps which is attached to this Despatch shows that very few plague cases are occurring in them. Two new large camps, containing an aggegate of over 1,200 persons, have recently been established.

The outbreak of plague in Sukkur is the most important incident in the rest of Sind. Since the 25th March there have been 290 cases in this town. An interesting account of the beginning of the outbreak is given in the letter of the Civil Surgeon of Sukkur which is enclosed. It began in a Hindu temple frequented by many of the inhabitants of the neighbourhood and spread over a dirty quarter of the town named Ghariabad. Vigorous measures have been taken to check the outbreak, and the cases do not now show a tendency to increase. The services of several commissioned and subordinate medical officers have been placed at the disposal of the Bombay Government for plague duty in Sind, and several nurses have been sent there from Calcutta. A plague committee has been constituted at Sukkur, special civil, military, and commissioned medical officers have been deputed to the place, and 30 English soldiers have been sent to assist in the operations. The infected portion of the Ghariabad quarter has been burnt down. The Government of Bombay have been addressed with reference to the measures for segregating the sick and contaminated and for evacuating infected houses, and information on these subjects will be communicated to your Lordship in due course. Some indigenous cases continue to occur in the Karachi district and more numerous cases in the Hyderabad district, in neither district has there been any marked change in the situation.

4. In paragraph 11 of our Despatch of the 31st March we informed your Lordship that, although we did not think it necessary to stop the import of grain from Sind into other Provinces, we had instructed the Government of Bombay that all possible precautions should be taken to prevent contaminated grain being exported from Sind. Communications from the Government of Bombay, which are appended* to this Despatch, show the measures that have been taken by the local authorities to carry out this instruction. Exportation from godowns in the infected parts of Sukkur has been prohibited, and the measures taken for maintaining a watch on godowns in other places and for keeping them clean are sufficient to prevent the trade in grain from being a serious source of additional danger.

5. Outside the Bombay Presidency and Sind the following cases have been reported since the 24th March:—

Goa - - - - - -	8
Khandraoni in the Gwalior State - - - -	2
Rawal Pindi district - - - -	2
Sharigh in Baluchistan - - - - - -	1

The two cases in Khandraoni were admitted to the hospital camp on the 27th March and the 1st April respectively. There are now only six patients in the hospital, of whom five were declared convalescent on the 29th March. The stringent measures adopted have thus been successful in stamping out this local outbreak. The village is undergoing a thorough cleansing and disinfection, and the inhabitants will not be allowed to return until it is put into a sanitary condition. The Government of the Punjab report that careful sanitary precautions were taken in the village in the Rawal Pindi district from which two cases of plague were reported on the 3rd instant, and that the infection did not spread. The isolated case at Sharigh was that of a coolie who had travelled there from Sukkur.

6. In paragraph 7 of the Despatch of the 11th March 1897 your Lordship has requested that in any future Despatch that is sent upon the subject of the measures adopted for the relief of the sufferers and the prevention of the spread of the epidemic, it may be made clear that sufficient temporary hospitals, with an adequate staff of doctors and nurses, have been promptly established at each plague centre, and that where available women doctors are employed in plague wards for women. Your Lordship observes that it appears that the Bengal Government have taken measures to have special hospitals ready in the event of the plague reaching Calcutta, but that the information on this point is less complete regarding the plague centres of Western India. We are able to assure your Lordship that the importance of affording prompt and sufficient medical treatment for the sick has been everywhere fully realised. In Bombay numerous special hospitals have been erected by the Government, the local authorities, and supervised private agency for the reception of sufferers belonging to different classes of the community, and persons attacked by the plague are immediately removed to these hospitals. Similar measures have been adopted in the other towns in the Bombay Presidency where outbreaks of the disease have occurred. The rules framed by the Local Governments make special provision for the treatment of the sick, and temporary hospitals have been erected at places where travellers are detained under observation, and at other principal centres. A large number of medical officers have been appointed to carry out these measures. In addition to the officers placed on special duty and specially appointed by the Local Governments, we have deputed the number of officers shown in the following list for plague duty in the different Provinces:—

—	Commissioned Officers.		Military Assistant Surgeons.	Hospital Assistants.
	Army Medical Service.	Indian Medical Service.		
Bombay - - - - - - -	10	31†	23	66
Madras - - - - - -	—	2	—	—
North-Western Provinces and Oudh - -	5	10	6	—
Punjab - - - - - - -	3	3	1	10
Central Provinces - - - - - -	—	5	1	—
Rajputana - - - - - - -	—	2	—	5
Baluchistan - - - - - -	1	—	—	—
Total - - -	19	53	31	81

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* Not reprinted.

† Includes officers in civil employ in Bombay at the time of their deputation.

We shall furnish your Lordship in a later Despatch with detailed information as to the places at which plague hospitals have been erected, and as to the arrangements made for the employment of women doctors in plague wards for women.

7. In paragraphs 6 to 9 of our Despatch of the 31st March we explained our views on the question of the imposition of land quarantine against infected areas; to this Despatch is appended correspondence showing the special precautions taken in conformity with those views for the protection of Rajputana, the Punjab, and Baluchistan. The occurrence of epidemic cases at Palanpur has brought the disease close to the borders of Rajputana. The measures taken at Palanpur appear to have been successful in checking the outbreak at that place. To prevent its spreading to Rajputana persons leaving Palanpur by the Rajputana-Malwa Railway are examined at the time of departure and on arrival at their destination; all persons considered in any way suspicious are detained under observation, and a surveillance is maintained over the remainder after they have arrived at their destination. The telegram from the Government of the Punjab, No. 377, dated the 27th March 1897, explains the measures adopted to watch the traffic from Sind to the Punjab by road and river. Entrance into the Dera Ghazi Khan district, except by routes leading past inspection posts, has been prohibited and inspection posts have been established at Rajhan near the south of Dera Ghazi Khan and the Mithankot ferry. At the latter post boats travelling up stream are stopped and inspected. With regard to the inspection of travellers by railway, the Government of Punjab has, in accordance with our instructions, directed the commissioned medical officer employed on inspection duty at Khanpur to exercise a wide discretion in stopping all suspicious persons. Principal places of inspection have also been established at Sher Shah and Raewind, and in order to prevent evasion inspecting officers travelling on the North-Western Railway between Sadikabad and Samasatta. As an additional precaution instructions have been issued that all persons booking at Sukkur should be examined before they are permitted to depart, that those who are in any way suspicious or are not likely to be traceable on arrival, or themselves to report cases of plague, should be detained under observation, and that the remainder should be subjected to surveillance on arrival at their destination. For the protection of Baluchistan a commissioned medical officer has been detailed to Sibi for the purposes of medical inspection. The Agent to the Governor-General has been instructed that the inspecting officer should exercise a wide discretion in detaining the suspicious in a properly constituted observation camp.

8. Surgeon-Major-General Warburton, our Officiating Sanitary Commissioner, has recently inspected some of the principal observation stations on the lines of railway leading from Bombay to Calcutta and Northern India. His report, which is enclosed, shows that the medical inspection of passengers is efficiently carried out. Attention is being paid to the defects he points out, and we have asked the Bombay Government to arrange for the deputation of female medical attendants to Kaliyan and Bhusawal, and the Chief Commissioner of the Central Provinces to provide a hospital for women at Itarsi.

9. In conclusion we forward, for your Lordship's information, a copy of the Regulations* issued by Local Governments and Administrations under the Epidemic Diseases Act since those which were forwarded with our last Despatch, and some of the more important orders recently issued by the Government of Bombay.

We have, &c.
(Signed) ELGIN.
&c. &c.

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* Not reprinted.

Enclosures.

STATEMENT of SEIZURES and DEATHS in BOMBAY.

Date.	Seizures.	Deaths.	Deaths from all Causes.
Total during the month of October 1896	389	276	
„ „ November 1896	333	268	
„ „ December 1896	1,655	1,160	
„ „ January 1897	2,374	1,825	
„ „ February 1897	3,173	3,072	
„ for 1st to 24th March 1897	1,957	1,756	
25th March 1897	81	68	161
26th „ „	76	67	150
27th „ „	74	59	163
28th „ „	75	82	167
29th „ „	75	76	168
30th „ „	96	77	168
31st „ „	61	72	160
1st April „	67	52	126
2nd „ „	51	63	147
3rd „ „	77	55	149
4th „ „	73	57	136
5th „ „	43	59	150
6th „ „	77	40	139
7th „ „	49	52	132
8th „ „	58	59	135
9th „ „	68	46	142
10th „ „	61	63	150
11th „ „	61	66	153
12th „ „	40	50	140
Total for 24th March to 12th April 1897	1,263	1,283	
Grand total	11,144	9,640	

STATEMENT of SEIZURES and DEATHS at KARACHI.

Date.	Seizures.	Deaths.	Date.	Seizures.	Deaths.
Total during December 1896	47	59	2nd April	33	27
„ „ January 1897	808	743	3rd „	40	31
„ „ February 1897	1,105	971	4th „	27	25
„ from 1st to 23rd March 1897	878	652	5th „	34	28
			6th „	22	15
			7th „	24	26
24th	41	21	8th „	32	20
25th	36	37	9th „	10	16
26th	38	30	10th „	19	17
27th	39	19	11th „	21	14
28th	36	30			
29th	25	25	Total for 23rd March to 11th April 1897.	608	469
30th	47	34			
31st	40	27			
1st April	41	27	Grand total	3,446	2,894

WEEKLY STATEMENT of MORTALITY in the TOWN of BOMBAY.

Week ending	Total Number of Deaths.	Average Number of Deaths during the corresponding Period of the preceding Five Years.
23rd March 1897	1,115	509
30th „ „	1,120	520
6th April „	997	527

List of Health Camps established in various parts of Karachi and Number of Plague Seizures and Deaths reported therein.

Serial No.	Quarter.	Name of Camp.	Number in Occupation.	Alphabetical Reference.	Number of Deaths reported up to 24th March.	Total No. of Seizures and Deaths from 8th to 24th March, inclusive.		Report dated 25th March		Report dated 26th March.		Report dated 27th March.		Report dated 28th March.		Report dated 29th March.		Report dated 30th March.		Report dated 31st March.		Report dated 1st April.		Report dated 2nd April.		Report dated 3rd April.		Report dated 4th April.		Report dated 5th April.		Report dated 6th April.		Report dated 7th April.		Report dated 8th April.		Report dated 9th April.		Report dated 10th April.		Report dated 12th April.	
						Seizures.	Deaths.	Seizures.	Deaths.	Seizures.	Deaths.	Seizures.	Deaths.	Seizures.	Deaths.	Seizures.	Deaths.	Seizures.	Deaths.	Seizures.	Deaths.	Seizures.	Deaths.	Seizures.	Deaths.	Seizures.	Deaths.	Seizures.	Deaths.	Seizures.	Deaths.	Seizures.	Deaths.	Seizures.	Deaths.	Seizures.	Deaths.	Seizures.	Deaths.	Seizures.	Deaths.	Seizures.	Deaths.
1	Lyari -	Nusserpoori Camp, No. 1	2,500	A	—	15	9	1	1	1	1	—	—	—	—	—	—	—	—	1	1	1	—	1	1	—	—	—	—	2	2	1	1	—	—	—	—	1	1	—	—	—	—
2	„	„ „ No. 2	28	B	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	„	Mahomedan Camp	600	C	—	6	3	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	2	1	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—
4	„	Sweepers' Camp	196	D	—	2	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	2	—	—	1	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—
5	„	Camp for Pathans	29	E	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6	„	Camp near Newahad	5	F	—	6	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	„	„ Kalankat	10	G	—	11	7	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8	„	„ Gul Mahomed Lines	48	H	—	4	2	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1	—	—	—	—	—	2	2	—	—	—	—	—	—	—	—	—	—	—	—
9	Jail -	Nanakawra Tank	9	I	—	2	2	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10	Garden -	Lawrence Road, near River Bank	30	J	—	3	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
11	Ranchore Lines.	Ranchore Lines, near Burnes Road, for sweepers.	24	K	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
12	„	Ranchore Lines, near Burnes Road, for others.	52	L	—	13	2	—	—	—	1	—	—	—	—	4	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
13	Lyari -	New Abad Camp, No. 1, north	46	M	—	6	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14	„	Khada Isolation Huts	20	N	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15	„	Gul Mahomed Lines, West Camp, No. 2.	72	O	—	3	2	2	1	2	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
16	Kiamari	Kiamari Camp	27	P	—	8	6	—	—	2	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
17	Lyari -	Gharibabad	3	Q	—	1	2	1	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
18	Ranchore Lines.	Camp to south of Compressor Station near Princes Street.	24	R	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
19	„	Camp No. 2, opposite Compressor Station, Lawrence Road.	98	S	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—
20	Garden	Mahomedan Makrami Camp, No. 2, Lawrence Road, north of Government Garden.	33	T	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
21	Frere Town -	Railway Camp, near Railway Tank	14	U	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
22	Railway	City Station Camp	15	V	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
23	„	Bombay Company Camp	48	W	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
24	Lyari -	Chakiwara Camp	43	X	—	3	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
25	Machimiani -	Harris Road Camp	9	Y	—	5	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
26	Lyari -	Dhoby Ghaut Camp	15	Z	—	9	5	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
27	Quarry A-a. -	Marwari Camp	344	AA	—	—	—	—	—	2	2	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	3	3	1	1	1	1	1	1	—	—	2	2	—	—
28	Lyari -	New Kalan Kot Camp	859	AB	—	—	—	—	—	1	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	1	1	—	—	—	—	—	—	—	—	—	—	—
		Total	—	—	117	100	61	7	3	10	6	—	—	1	—	6	6	—	—	1	1	5	2	6	5	1	—	—	—	10	10	3	2	1	1	1	1	1	1	3	3	2	2

STATEMENT of CASES of PLAGUE outside BOMBAY and KARACHI.

Date of Report.	Bombay.														
	Ahmedabad.	Ahmednagar.	Amreli.	Baroda Territory.*	Belgaum.	Broach.	Cutch.	Dharwar.	Dhulia.	Kalyan.	Kanara.	Kathiawar.	Khaira.	Khandesh.	Kolaba.
Total entered in the statement forwarded with the Despatch No. 12, dated the 31st March 1897.	111	42	1	224	3	17	150	1	1	1	2	104	8	22	153
25th March	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
26th „	—	—	—	54†	—	—	—	—	—	—	—	6	—	—	4
27th „	—	—	—	1	—	—	18	—	—	—	—	1	—	—	3
28th „	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
29th „	1	—	—	1	—	—	6	—	—	—	—	9	—	—	11
30th „	—	—	—	9	—	1	2	—	—	—	—	—	—	—	17
31st „	—	—	—	24	—	—	—	—	—	—	—	—	—	—	1
1st April	4	—	—	3	—	—	6	—	—	—	—	1	—	1	24
2nd „	—	2	—	—	—	—	—	—	—	—	—	2	—	—	20
3rd „	1	—	—	3	—	1	4	—	—	—	—	3	—	—	23
4th „	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5th „	—	—	—	22	—	—	2	—	—	—	—	4	—	—	18
6th „	—	3	—	8	—	—	5	—	—	—	—	7	—	—	—
7th „	—	—	—	19	—	—	—	—	—	—	—	2	—	—	80
8th „	—	—	—	—	—	—	2	—	—	—	—	2	—	—	38
9th „	—	—	—	—	—	—	8	—	—	—	—	1	—	—	22
10th „	2	—	—	11	—	—	2	—	—	—	—	2	—	—	—
11th „	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th „	—	—	—	10	—	—	10	—	—	—	—	9	—	—	—
Total	119	47	1	335	3	19	215	1	1	1	2	153	8	23	414

Date of Report.	Bombay.													
	Kolhapur.	Kotri.	Mahi Kantha.	Nasik.	Okhamandel.	Palanpur.	Poona.	Ratnagiri.	Satara.	Savantwadi.	Sholapur.	Surat.	Tatta.	Thana.
Total entered in the statement forwarded with the Despatch No. 12, dated the 31st March 1897.	56	15	3	26	2	46	1,556	248	134	25	12	792	9	2,543
25th March	—	—	—	—	—	—	48	—	—	—	—	35	—	67
26th „	1	—	—	—	—	2	52	—	4	—	—	87	—	83
27th „	—	—	—	—	—	4	54	—	—	—	—	—	—	72
28th „	—	—	—	—	—	—	—	—	—	—	—	—	—	—
29th „	—	—	—	1	—	9	102	—	—	—	—	24	—	33
30th „	—	—	—	—	—	4	50	4	—	—	1	75	—	150
31st „	—	—	—	—	—	3	39	1	—	—	2	61	—	93
1st April	1	—	—	—	—	—	36	2	2	—	—	36	—	53
2nd „	—	—	—	—	—	15	40	—	5	—	—	33	—	122
3rd „	—	—	—	—	—	4	50	1	—	—	—	39	—	15
4th „	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5th „	—	—	—	—	—	5	88	—	4	—	—	34	—	67
6th „	—	—	—	1	—	1	45	1	—	—	—	87	—	105
7th „	—	—	—	2	—	—	39	1	—	—	—	55	—	51
8th „	—	—	—	—	—	—	42	5	—	—	—	41	—	54
9th „	—	—	—	—	—	13	61	1	1	—	—	60	—	117
10th „	—	—	—	—	—	—	32	—	—	—	—	—	—	—
11th „	—	—	—	—	—	—	—	—	—	—	—	—	—	—
12th „	—	—	—	3	—	5	77	3	2	—	—	21	—	53
Total	59	15	3	33	2	111	2,411	267	152	25	15	1,480	9	3,678

Date of Report.	Sind.							Rajputana.			Central Provinces.		
	Hyderabad.	Karachi District.	Shikarpur.	Sind.	Thar and Parkar.	Sakkur.	Upper Sind Frontier District.	Abu Road.	Jodhpur.	Marwar.	Itarsi.	Jubbulpur.	Seoni.
Total entered in the statement forwarded with the Despatch No. 12, dated the 31st March 1897.	111	115	54	15	—	78	—	5	1	7	11‡	1	1
25th March	22	1	7	—	—	22	—	—	—	—	—	—	—
26th „	6	2	7	—	—	16	—	—	—	—	—	—	—
27th „	1	—	4	—	—	8	1	—	—	—	—	—	—
28th „	—	—	—	—	—	—	—	—	—	—	—	—	—
29th „	—	4	3	—	—	28	—	—	—	—	—	—	—
30th „	1	1	9	—	—	13	—	—	—	—	—	—	—
31st „	8	—	—	—	2	15	—	—	—	—	—	—	—
1st April	7	2	1	—	1	3	—	—	—	—	—	—	—
2nd „	6	1	1	—	—	23	—	—	—	—	—	—	—
3rd „	26	6	—	—	—	22	—	—	—	—	—	—	—
4th „	—	—	—	—	—	—	—	—	—	—	—	—	—
5th „	15	4	—	—	—	18	—	—	—	—	—	—	—
6th „	2	2	6	—	—	—	—	—	—	—	—	—	—
7th „	28	—	—	—	—	35	—	—	—	—	—	—	—
8th „	—	4	3	—	—	22	—	—	—	—	—	—	—
9th „	20	4	—	—	—	9	—	—	—	—	—	—	—
10th „	16	—	2	—	—	25	—	—	—	—	—	—	—
11th „	—	—	—	—	—	—	—	—	—	—	—	—	—
12th „	86	1	1	—	—	31	1	—	—	—	—	—	—
Total	355	147	98	15	3	368	2	5	1	7	1	1	1

Date of Report.	Punjab.				N.W.P. and Oudh.			Central India.		Goa.	Baluchistan.
	Delhi.	Rawalpindi District.	Sialkot.	Sheershah.	Bareilly.	Rai Bareilly.	Unao.	Khandraoni.	Ujjain.	Goa.	Sharigh.
Total entered in the statement forwarded with the Despatch No. 12, dated the 31st March 1897.	1	—	3	2	2	1	1	72	6	52	—
25th March	—	—	—	—	—	—	—	—	—	—	—
26th „	—	—	—	—	—	—	—	—	—	—	—
27th „	—	—	—	—	—	—	—	1	—	—	—
28th „	—	—	—	—	—	—	—	—	—	—	—
29th „	—	—	—	—	—	—	—	—	—	—	—
30th „	—	—	—	—	—	—	—	—	—	6	1
31st „	—	—	—	—	—	—	—	—	—	—	—
1st April	—	—	—	—	—	—	—	1	—	—	—
2nd „	—	—	—	—	—	—	—	—	—	—	—
3rd „	—	—	—	—	—	—	—	—	—	—	—
4th „	—	—	—	—	—	—	—	—	—	—	—
5th „	—	2	—	—	—	—	—	—	—	2	—
6th „	—	—	—	—	—	—	—	—	—	—	—
7th „	—	—	—	—	—	—	—	—	—	—	—
8th „	—	—	—	—	—	—	—	—	—	—	—
9th „	—	—	—	—	—	—	—	—	—	—	—
10th „	—	—	—	—	—	—	—	—	—	—	—
11th „	—	—	—	—	—	—	—	—	—	—	—
12th „	—	—	—	—	—	—	—	—	—	—	—
Total	1	2	3	2	2	1	1	74	6	60	1

* Includes Kadi, Naosari, Division, Petlad.

† Between 10th and 23rd.

‡ The figures for Itarsi in the previous statement were suspect cases detained at the railway station. It has transpired that only one authenticated case of plague has been detected at Itarsi.

STATEMENT showing BUBONIC PLAGUE CASES and DEATHS (imported as well as indigenous) in the PRESIDENCY reported to GOVERNMENT from September to Week ending 2nd April 1897.

1.	2. Bombay City.				3. Karachi City.				4. Poona City, including Suburb and Cantonment.				5. Ahmedabad District.				6. Kaira District.			
Periods.													Imported.		Indigenous.		Imported.		Indigenous.	
	Plague Cases.	Plague Deaths.	Total actual Mortality from all Causes.	Total average Mortality from all Causes.	Plague Cases.	Plague Deaths.	Total actual Mortality from all Causes.	Total average mortality from all Causes.	Plague Cases.	Plague Deaths.	Total actual Mortality from all Causes.	Total average Mortality from all Causes.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Total as per Statement for period from September to week ending 26th March 1897.	10,202	8,610	34,063	—	2,993	2,531	4,957	—	1,555	1,117	4,170	—	105	58	18	11	19	14	—	—
During week ending 2nd April 1897.	499	481	1,099	520	264	189	263	60	*292	197	335	73	4	2	1	1	—	—	—	—
Total	10,701	9,091	35,162	—	3,257	2,720	5,220	—	1,847	1,314	4,505	—	109	60	19	12	19	14	—	—

	7. Broach District.				8. Surat District.				9. Thana District.				10. Ahmednagar District.				11. Khandesh District.			
Periods.	Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Total as per Statement for period from September to week ending 26th March 1897.	15	11	1	—	146	94	745	562	561	311	2,271	1,855	40	27	3	3	28	9	—	—
During week ending 2nd April 1897.	1	—	—	—	10	4	219	187	77	34	389	337	2	—	—	—	1	1	—	—
Total	16	11	1	—	156	98	964	749	638	345	2,660	2,192	42	27	3	3	29	10	—	—

* These include one previous case which was subsequently reported.

STATEMENT showing BUBONIC PLAGUE CASES and DEATHS (imported as well as indigenous) in the PRESIDENCY reported to GOVERNMENT from September to Week ending 2nd April 1897—*continued.*

Periods.	12. Nasik District.				13. Poona District, excluding the City.				14. Satara District.				15. Sholapur District.				16. Kolaba District.			
	Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Total as per Statement for period from September to week ending 26th March 1897.	38	29	2	2	97	83	14	11	*60	*46	*82	*65	8	5	4	4	98	92	135	94
During week ending 2nd April 1897.	1	1	—	—	25	23	1	1	3	3	5	5	3	2	—	—	5	6	71	49
Total	39	30	2	2	122	106	15	12	63	49	87	70	11	7	4	4	103	98	206	143

Periods.	17. Ratnagiri District.				18. Belgaum District.				19. Dharwar District.				20. Kanara District.				21. Baroda Territory.			
	Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Total as per Statement for period from September to week ending 26th March 1897.	218	189	68	55	2	1	—	—	1	—	—	—	1	—	—	—	64	42	125	111
During week ending 2nd April 1897.	3	2	4	2	—	—	—	—	—	—	—	—	—	—	—	—	2	3	23	22
Total	221	191	72	57	2	1	—	—	1	—	—	—	1	—	—	—	66	45	148	133

* The difference of one in these figures and those shown in the statement for the week ending 26th March is due to one "indigenous" case and death at Bahule, Taluka, Patan, having turned out to be "imported."

STATEMENT showing BUBONIC PLAGUE CASES and DEATHS (imported as well as indigenous) in the PRESIDENCY reported to GOVERNMENT from September to Week ending 2nd April 1897—*continued.*

Periods.	22. Kathiawar District.				23. Kolhapur.				24. Cutch.				25. Mahi Kantha.				26. Palanpur.			
	Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases	Deaths.
Total as per Statement for period from September to week ending 26th March 1897.	70	35	44	24	11	9	54	46	124	84	26	25	3	1	—	—	2	2	48	26
During week ending 2nd April 1897.	—	—	13	12	—	—	—	2	22	8	10	8	—	—	—	—	—	—	35	18
Total - -	70	35	57	36	11	9	54	48	146	92	36	33	3	1	—	—	2	2	83	44

Periods.	27. Savantvadi.				28. Karachi District, excluding the City.				29. Hyderabad District.				30. Shikarpur District.				31. Upper Sind Frontier District.			
	Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Total as per Statement for period from September to week ending 26th March 1897.	25	24	—	—	125	91	21	18	48	42	89	65	41	23	118	92	1	1	—	—
During week ending 2nd April 1897.	—	—	—	—	1	1	7	5	2	—	21	14	18	18	90	60	—	—	1	1
Total - -	25	24	—	—	126	92	28	23	50	42	110	79	59	41	208	152	1	1	1	1

Statement showing Bubonic Plague Cases and Deaths (imported as well as indigenous) in the Presidency reported to Government from September to Week ending 2nd April 1897—*continued.*

Periods.	32. Thar and Parkar.				33. Plague among Europeans.			
	Imported.		Indigenous.		Bombay.		Mofussil.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Total as per Statement for period from September to week ending 26th March 1897.	—	—	—	—	*37	*14	†4	—
During week ending 2nd April 1897.	3	2	—	—	1	—	1	1
Total - - -	3	2	—	—	38	14	5	1

* Out of these, five cases and two deaths took place last week (*vide* the last statement), and the rest represent the total number of attacks and deaths among Europeans, pure and domiciled, from the commencement of the plague up to the commencement of the last week.

† Of these, one was shown last week; three took place before the last week.

Supplementary Statement showing in detail the Places in the Mofussil where Indigenous Plague Cases and Deaths have occurred during Week ending 2nd April 1897.

Places.	Reported during the Week ending 2nd April 1897.		Previously reported and shown in the General Statement for Period from September to 26th March 1897.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Ahmedabad District.						
Ahmedabad Railway Suburb - -	1	1	6*	4*	7	5
Other places - - - -	—	—	12*	7*	12*	7*
Total - -	1	1	18	11	19	12
Surat District.						
Surat, Táluka Chorási - - -	2	4	27	22	29	26
Adájan do. - - -	4	6	8	4	12	10
Ránder do. - -	16	12	70	62	86	74
Bulsár, Táluka Bulsár - - -	107	90	458	348	565	438
Gaderia do. - - -	2	2	—	—	2	2
Mugod do. - - -	42	34	63	41	105	75
Vasiar do. - - -	3	4	8	4	11	8
Dhamdachi do. - - -	5	5	—	—	5	5
Nánakváda do. - - -	3	3	3	3	6	6
Bhádeli Jagálála do. - - -	4	4	15	9	19	13
Abrama do. - - -	11	10	—	—	11	10
Návera do. - - -	1	1	3	2	4	3
Parmera do. - - -	5	3	6	4	11	7
Bhadeli Desái Purti do. - - -	1	—	4	1	5	1
Atak Pardi do. - - -	2	1	—	—	2	1
Bhagdáváda do. - - -	2	1	7	4	9	5
Pardi Sandhpur do. - - -	1	1	—	—	1	1
Kosamba do. - - -	1	1	4	2	5	3
Mográvádi do. - - -	1	1	8	8	9	9
Sonvada do. - - -	1	1	—	—	1	1
Suri Bujrug, Táluka Jalálpur - - -	2	1	4	5	6	6
Munsad do. - - -	1	1	—	—	1	1
Medhar do. - - -	—	1	3	2	3	3
Salej do. - - -	2	—	—	—	2	—
Other places - - - -	—	—	54	41	54	41
Total - -	219	187	745	562	964	749

* For the figures *vide* statement for the week ending 19th March 1897.

Places.	Reported during the Week ending 2nd April 1897.		Previously reported and shown in the General Statement for Period from September to 26th March 1897.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Thana District.						
Bandra, Táluka Salsette	24	27	797	664	821	691
Curla do.	38	30	316	277	354	307
Thána do.	18	10	77	46	95	56
Vesáve do.	44	44	87	82	131	126
Mudha do.	10	7	12	10	22	17
Bhyndar do.	7	5	79	60	86	65
Chembur do.	3	3	—	—	3	3
Máhul do.	2	2	1	1	3	3
Malád do.	8	4	6	4	14	8
Trombay do.	1	1	—	—	1	1
Andheri do.	3	4	8	5	11	9
Muda do.	12	11	—	—	12	11
Dánda do.	2	1	—	—	2	1
Marole do.	2	1	—	—	2	1
Bassein, Táluka Bassein	53	39	91	70	144	109
Agáshi do.	14	10	39	32	53	42
Mulgaon do.	22	18	34	23	56	41
Jochandra do.	1	—	—	—	1	—
Sándor do.	1	1	—	—	1	1
Sopára do.	9	13	28	13	37	26
Nagaon do.	12	7	—	—	12	7
Vadaoli do.	2	—	—	—	2	—
Bhiwndi, Táluka Bhiwndi	22	18	453	400	475	418
Máhim, Táluka Máhim	5	8	26	21	31	29
Tárápur do.	1	1	5	4	6	5
Kalyán, Táluka Kalyán	2	1	5	4	7	5
Chinchani, Táluka Dáhánu	71	71	134	84	205	155
Other places	—	—	73	55	73	55
Total	389	337	2,271	1,855	2,660	2,192
Poona District.						
Kadus, Táluka Khed	1	1	—	—	1	1
Other places	—	—	14	11	14	11
Total	1	1	14	11	15	12
Satara District.						
Kharsi, Tarf Bárámuri, Táluka Jávli	5	5	—	—	5	5
Other places	—	—	82*	65*	82*	65*
Total	5	5	82	65	87	70.
Kolaba District.						
Panvel, Táluka Panvel	21	17	49	40	70	57
Pákhádi Bori, Uran Mahál, Táluka Panvel	3	1	65	40	68	41
Kegaon, Uran Mahál do	7	2	—	—	7	2
Alibág, Táluka Alibág	12	9	—	—	12	9
Avás do.	3	—	6	4	9	4
Revdanda do.	12	11	—	—	12	11
Thál do.	1	1	—	—	1	1
Murud, Janjira State	3	3	3	—	6	3
Dongri do.	1	—	—	—	1	—
Karset do.	8	5	—	—	8	5
Other places	—	—	12	10	12	10
Total	71	49	135	94	206	143
Ratnagiri District.						
Karden, Táluka Dápoli	4	2	—	—	4	2
Other places	—	—	68	55	68	55
Total	4	2	68	55	72	57

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* For the difference of one in the figures shown in the last statement and this *see* the footnote on page 60 relating to figures of this district.

Places.	Reported during the week ending 2nd April 1897.		Previously reported and shown in the General Statement for Period from September to 26th March 1897.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Baroda Territory.						
Gandevi, Navsári Division	17	17	—	—	17	17
Bilimora do.	2	1	—	—	2	1
Dhamdacha do.	1	1	—	—	1	1
Vadsangal do.	1	1	—	—	1	1
Delvada do.	1	1	—	—	1	1
Vadoli do.	1	1	—	—	1	1
Total Navsári Division	23	22	97	88	97	88
Other places	—	—	28	23	28	23
Total	23	22	125	111	148	133
Kathiawar.						
Bhávnagar	6	6	18	8	24	14
Kutiána	7	6	16	10	23	16
Other places	—	—	10	6	10	6
Total	13	12	44	24	57	36
Kolhapur and Southern Maratha Country.						
Manerajiri, Inchalkaranji State	—	2	53	45	53	47
Other places	—	—	1	1	1	1
Total	—	2	54	46	54	48
Cutch.						
Mándvi, Táluka Mándvi	4	3	—	—	4	3
Maska do.	6	5	4	4	10	9
Other places	—	—	22	21	22	21
Total	10	8	26	25	36	33
Palanpur.						
Palanpur Town	35	18	48	26	83	44
Karachi District.						
Tatta	1	1	—	—	1	1
Kotri	3	2	—	—	3	2
Jangshahi	2	1	7	6	9	7
Mango Pir	1	1	—	—	1	1
Other places	—	—	14	12	14	12
Total	7	5	21	18	28	23
Hyderabad District.						
Hyderabad	11	6	80	56	91	62
Tando Allayhar	10	8	—	—	10	8
Other places	—	—	9	9	9	9
Total	21	14	89	65	110	79
Shikarpur District.						
Sukkur	90	60	113	88	203	148
Other places	—	—	5	4	5	4
Total	90	60	118	92	208	152
Upper Sind Frontier District.						
Jacobábád	1	1	—	—	1	1

Note of Inspection by Surgeon-Major-General Warburton, Officiating Sanitary Commissioner with the Government of India, unofficial No. 331, dated $\frac{4}{6}$th April 1897.

I beg to submit the following note on my recent visits to first class plague inspection stations—

1. *Khana.*—I arrived at 5.11 p.m. and left at 6.20 p.m. on 24th March. Surgeon-Captain Dyson, Sanitary Commissioner, Bengal, and Surgeon-Captains Calvert and Jay-Gould and Surgeon-Lieutenant Peck, the three officers posted here for inspection duty, met me at the station and showed me over the segregation camp, a very accurate description of which, together with inspection and disinfecting arrangements, &c., is given in the accompanying note by Surgeon-Captain Dyson. The distribution of water by pipes and more efficient steaming arrangements will shortly be completed.

There had been 364 admissions to date and there were 22 suspects in the camp at the time of my visit, two of whom were in hospital, one suffering from pneumonia and the other from chicken-pox.

I saw the passengers in the 6.20 p.m. train inspected and was satisfied with the thoroughness of the inspection. Seven first and second class and 363 third class passengers were examined, and no complaints were made.

So far no cases of plague have been discovered.

The lowest number of passengers inspected on any one day was 1,799 and the highest 4,067.

The lighting arrangements were defective, but electric light will soon be in operation at a special inspection platform which was nearly completed and at which only trains from up-country will stop.

2. *Manikpur.*—I reached this station at 6 p.m. on the 25th and remained there till 9.14 the next morning.

Only two trains from the Bombay direction—one at 7.24 a.m. and the other at 7.5 p.m.—are examined each day. There are no night trains. I was present at the inspection of two trains, the total number of passengers examined being 360, of whom about 15 per cent. were from the Bombay Presidency.

The examining staff consists of one commissioned medical officer, Surgeon-Lieutenant Dawes, and a native female nurse; the former examines all the men and feels the pulses of females, whose examination is completed by the nurse. The examinations were carefully made. There were no purdah women and no complaints.

One hospital assistant is in charge of the segregation camp and is present at inspections to take over any suspects or plague cases that may have to be detained. The camp consists of tents and huts for Europeans and natives with hospitals properly isolated, but as only two suspects had so far been detained, the hospital assistant has had little to do. The small number of "suspects" at this station is probably due to effective inspections at Jabbulpur and Itarsi.

The drinking water is here the great difficulty. Europeans get theirs from Allahabad and natives use water from the railway well and a neighbouring tank, both of which are drying up. The station is badly lighted.

The medical officer keeps no diary. I have directed him to do so, entering the number of passengers examined each day, especially noting the number from Bombay, and to send a copy of the diary each week to his superior officer.

The staff is sufficient and no new passenger is allowed to enter the train till the inspected is completion.

3. *Itarsi.*—Surgeon-Colonel Hutcheson, Sanitary Commissioner, Central Provinces, joined me at Jabbulpur, where I learned there is a platform inspection of all passengers from the Bombay direction, conducted by a native assistant surgeon and hospital assistant, but I did not consider it necessary to remain and see how it was done. We reached Itarsi at 6.45 a.m. on 27th and left again at 9.40 a.m.

The staff here consists of a commissioned medical officer, Surgeon-Captain Bourke, a female hospital assistant for examining passengers, a native assistant surgeon, and hospital assistant for camp and other duties. Hospital and segregation arrangements for Europeans and natives are sufficient, except that a hospital for women is required, and the camp is well situated and water supply satisfactory. There is an incinerator for the destruction of excreta and other infected substances. There are no means of disinfecting clothing or bedding except by boiling, but so far suspected articles of this kind have been burned. I have suggested that some clothing and bedding should be kept in stock to replace any destroyed.

There were 10 men and 3 women suspects in camp, and since 17th February, when Dr. Bourke assumed charge, 49 have been detained; none of these have developed into plague cases, though a plague case, which proved fatal, was taken out of the train on February 16th. Before that 10 or 12 cases are said to have occurred, but the information is not reliable and there are no records.

Three trains are examined here daily, at 8.10 a.m., 4.35 p.m., and 9.49 p.m., so that there is no night duty. Dr. Bourke calculates that about 500 passengers are examined daily. I saw the examination of the 8.10 train in which were 121 passengers and was satisfied with it. I was also examined on my return on 30th in the 4.35 p.m. train. On this occasion the carriages had not been locked at the last stopping place, and passengers were able to get out before examination. I drew attention to this.

I discovered at this station that passenger carriages are attached to goods trains on various railway lines, and not being scheduled the passengers thus conveyed are likely to evade inspection.

4. *Bhusawal* was reached at 5.3 p.m. on 27th, and I remained there till 9.35 p.m.

Four trains are inspected daily—at 8.20 and 9.16 a.m., and 6.40 and 9.5 p.m. No night trains. About 700 passengers are examined each day.

The staff consists of one commissioned medical officer, two military assistant surgeons, and five hospital assistants, and I found hospital assistants assisting at the inspections. I saw the two evening trains examined. The inspections were carefully performed.

I also visited the segregation camp, where there was accommodation for 20 plague cases and five suspects. There were two suspects under observation and three cases recovering from plague under treatment; 11 other cases of plague, making 14 in all, of whom seven had died and four had been discharged cured.

The water-supply was said to be satisfactory, but the roofs of the huts were too thin to be a protection against the sun. This was about to be remedied.

The staff I considered unnecessarily large, but I learned afterwards at Kalyan that the commissioned medical officer and two hospital assistants were under orders for transfer. One of the remaining hospital assistants might with advantage be replaced by a female hospital assistant as there is none here. I was examined here on the 30th in the 9.16 a.m. train. The examination appeared sufficient.

5. *Nagpur*.—We arrived here at 8 a.m., and left at 7.20 p.m. on the 28th. Three trains are examined here daily, at 8 a.m., 4.30 p.m., and 10 p.m., and from 400 to 500 passengers inspected.

The staff consists of a commissioned medical officer, Surgeon-Lieutenant Hammond, a native assistant surgeon, female hospital assistant, and a hospital assistant. I saw the examination of the train in which we arrived and was satified with it.

I also visited the segregation camp, which had been opened on 15th February with accommodation for 24 men and 8 women. At the time of my visit there were six cases under observation with four dependants. One case in hospital suspected to be plague but diagnosis not confirmed. Before the opening of the camp there had been two cases of plague with one death and one recovery, but no cases had occurred since.

There is a good water supply and the huts suitable and well situated.

6. *Kalyan*.—As I found I had a day to spare, I decided to visit Kalyan and wired accordingly to the Surgeon-General with the Bombay Government. I arrived there at 6 p.m. and left again at 11.40 p.m. on the 29th.

I was by the courtesy of the Surgeon-General, to whom my thanks are due, met by Surgeon-Major Street, D.S.O., Deputy Sanitary Commissioner, and Surgeon-Captain Prall, Acting Secretary to the Surgeon-General, also by the two commissioned inspecting medical officers, Surgeon-Lieutenants Walton and Dixon, and shown over the segregation camp. The morning report showed that there were 15 persons in the observation sheds and 19 cases in the plague sheds. From 13th February to 29th March 301 passengers have been detained. Of these 250 were suspects. About 98 appear to have been plague cases with 63 deaths, 16 discharged cured, and 19 remaining under treatment. The above figures are, perhaps, not quite accurate as some deaths from other causes appear to have been mixed up with those from plague.

Twenty scheduled trains have to be examined daily, but I could not find out the number of passengers inspected.

The staff consists of two commissioned medical officers, two military assistant surgeons, and nine hospital assistants, besides six sepoy attendants. There are 11 policemen in charge of the camp. An additional commissioned medical officer is under orders to join as the inspection work here is necessarily very hard and trying. I was present at the examination of three trains and found them carefully and properly conducted.

The camp is on ground which will become a swamp in the rains, and I am told that the only suitable position in the neighbourhood is the military encamping ground.

Efforts are being made to arrange for proper disinfecting apparatus.

The water supply from a well is said to be good.

I learned here that another first class inspection station is about to be started at Munmar, the junction of the Dhond and Manmad Railway.

There is, I understand, ample room for a large segregation camp here, and should it be found necessary to detain all passengers from Bombay, this would be a suitable place for such detention.

7. *Jhansi.*—I arrived here at 2.55 a.m. and left before 4 a.m. on 31st, and I saw Surgeon-Lieutenant Robertson make a very thorough inspection of the passengers in my train. Five trains are inspected here daily—at 1.45 a.m. and 2.55 a.m. from Bombay, 3 a.m. and 12 noon from the Gwalior direction, and 9.30 a.m. from Manikpur. Dr. Robertson has been here since February 8th.

The arrangements made for preventing passengers booking at Jhansi from entering the train before the inspection is completed are defective. I have drawn the attention of the Inspector-General of Civil Hospitals to this, and some other defects observed.

W. P. Warburton.

Note on the Arrangements in connexion with the Plague Observation Camp at Khana Junction on the East Indian Railway.

The accompanying plan of the quarantine encampment will explain how it has been laid out.

It will be seen that it is divided into three portions, viz., (1) the plague hospital; (2) the contact camp; and (3) the suspect camp.

The plague camp consists of—

(*a*) two structures, 45′ × 16″, which are the native plague hospitals,
(*b*) six rooms, 10′ × 10″, for the families of the patients, and
(*c*) eight rooms, 8′ × 10″, for the hospital attendants.

There is also a small pucka house for European cases, and accommodation for mehters and domes with a separate clear water tank for their use.

A Horbury's iron latrine is provided, also Larymore's stool incinerator, and there is a pure water-supply from iron tanks. The water for these tanks is obtained from a pucka well, carefully covered in, by a lift and force pump, and is thence distributed to the tanks by iron pipes. Each tank is fitted with a brass turncock, and provided with a wash-out plug for purpose of cleaning and disinfection and a covered-in man-hole. There is accommodation for 40 plague cases. The beds are of iron, and thus can be quickly disinfected with a paraffin torch. *Thalas* and *battis* made of iron (gaol pattern) have been supplied for feeding purposes, as they also can be quickly disinfected by heat.

In the contact camp there are 75 huts (68 completed to date), 10′ × 8″, for two persons. There is thus accommodation for 150 persons. This camp is also provided with a Horbury's latrine, and an iron tank for water supply. It is surrounded by barbed wire fencing.

The suspect camp—75 huts 10′ × 8″, at two persons per hut—provides accommodation for 150 persons. The camp is provided with a Horbury's latrine, and a pucka well is being rapidly constructed. The camp is surrounded with a barbed wire fencing.

Quarters for the hospital assistants and other officers are in course of construction.

A new shop for the *bunniah* is being built between the suspect and contact camps.

All the huts in the contact and suspect camps are numbered for convenience of registration.

Inspection.—The inspecting staff consists of two medical officers of the Indian Medical Service and two lady doctors.

One medical officer and one lady doctor are on duty together. Owing to the number of trains passing through at night, no arrangement can give more than one night in bed out of every two. Hence the duty is very severe, and the inspecting staff will have to be increased, or a breakdown may be expected.

Daily Roster.—The following table will show how the 24 hours are divided into watches so as to give each inspecting officer one night's rest out of two:—

Daily Roster.

9th March 1897	8 a.m. to 12 noon	Dr. Calvert. Miss Lander.
	12 noon to 8 p.m.	Dr. Peck. Miss Anthoni.
	8 p.m. to 8 a.m.	Dr. Calvert. Miss Lander.
10th March 1897	8 a.m. to 12 noon	Dr. Peck. Miss Anthoni.
	12 noon to 8 p.m.	Dr. Calvert. Miss Lander.
	8 p.m. to 8 a.m.	Dr. Peck. Miss Anthoni.

Trains.—The following time-table gives the time and number of trains to be examined (Madras time is kept):—

Number of Trains. 1.	Time of Arrival. 2.	Number of 1st and 2nd Class Passengers. 3.	Number of other Class. 4.	Plague Cases. 5.	Contact Cases. 6.	Suspect Cases. 7.	Medical Officer's Signature. 8.	Lady Doctor's Signature. 9.
12 down passenger	0-3	9	178	—	—	—	J. T. C.	H. L.
2 " mail	3-33	12	75	—	—	—	J. T. C.	H. L.
134 " express	4-35	15	176	—	—	—	J. T. C.	H. L.
6 " passenger	6-10	4	972	—	—	1	J. T. C.	H. L.
10 " mail	8-5	2	334	—	—	—	J. T. C.	S. L. A.
52 local passenger	9-58	2	497	—	—	—	E. S. P.	S. L. A.
4 down "	14-2	16	496	—	—	5	J. T. C.	H. L.
122 local mixed	16-50	—	89	—	—	—	J. T. C.	H. L.
8 down passenger	18-17	4	478	—	—	—	J. T. C.	H. L.
Total	—	64	3,295	—	—	6		

Examination.—Pending completion of the new platform, the examination of passengers takes place at the station. All passengers are required to alight and be examined—males by the medical officers and females by the lady doctors. A European station-master, a European police sergeant, two head constables, and nine constables attend each train. Of these, three constables are stationed on the up-platform to see that no person gets out on the wrong side of the train. In addition there are a number of railway *khalasis** present to open locked compartments, assist passengers to alight, &c. If any one is contumacious and declines to submit to the examination, time is not wasted arguing with him, but he is locked in and the carriage is cut off, and put into a siding, he being liable to the railway company for any loss or inconvenience they may sustain on this account. On the arrival of the train, ropes with hooks attached are fixed on to both ends of the first carriage and are held taut by the police. Male passengers are ranged in one or two rows nearest the ropes and facing the train. Female passengers are ranged on the platform near the train and facing it; their backs are thus turned towards the men. It has, however, been decided to examine them in future between *purdahs*† or *kanats*, so as to shield them altogether from the public gaze. Care is taken to avoid wounding their feelings in any way, and the police are not allowed to handle them at all. The police sergeant or station-master having reported that the compartments are empty, inspection of each passenger and his ticket begins. In a large number of cases their axillæ femoral, inguinal regions, and paroted glands are examined, and the temperature of all suspicious cases is taken. Whilst the inspection of carriage No. 1 is being made, carriage No. 2 is emptied and the passengers prepared for inspection, and so on. After inspection passengers re-enter their compartments, women going first. No one is allowed to wander up and down the platform.

Suspects from Bombay.—Passengers' tickets are examined at Asansole. As a result of that examination, the Sub-Inspector of Railway Police, Asansole, wires in advance to the medical officer and the Inspector of Police at Khana Junction the number of Bombay passengers, the class in which they are travelling, and in the case of third class passengers, the number of their carriage. The tickets of third class Bombay passengers are made over to the guard of the train, and they themselves are put in the last carriage for easy disposal. Passengers from Bombay, Poona, or other infected centres "suspected" by the medical officers are detained,* and with their baggages are handed over to a constable for safe custody until the examination of the train is completed. If the medical officer has any serious doubt about a case, he orders the carriage from which it is taken out to be cut off and immediately disinfected. On the departure of the train, the medical officer takes charge of the suspect's ticket, notes down the name, age, sex, caste, place of residence, and infected place from whence the "suspect" has come, and the number of train from which he was removed. The stationmaster on duty hands the inspecting medical officer a slip, showing the number of passengers examined (*a*) 1st and 2nd, (*b*) all other classes, (*c*) total. The inspection is then complete, and the train is allowed to go on.

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* *Khalasi* = porter.

† *Purdahs* or *kanats* = curtain or tent-walls.

Disposal of Suspects.—The "suspects" and their effects are then handed over to the European police sergeant on duty with any special instruction the medical officer may desire to give, and the latter arranges for their escort to the camp.

The camp staff consists of—

One military assistant surgeon.

Three civil hospital assistants and menial staff—cooks, bhistis, mehters, &c.

On arrival at the camp the "suspects" are made over by the police constable to the assistant surgeon in charge, who tells them off to their proper camp, locates them in a numbered hut, provides them with bedding, *i.e.*, straw, mat, or *takta-posh* as desired, explains the rules of the camp, and finally leaves them in charge of the hospital assistant in charge of that particular camp. The hospital assistant examines them, takes their temperature, and is responsible that the first signs of any illness are reported, that they are present on various parades, and that their wants as regards water, food, &c., are attended to without hurting their caste prejudices. The information regarding the "suspects" noted by the inspecting medical officer is made over to the camp clerk, and duly entered in the "release diary" of the officer in charge of the camp, and their tickets are duly filed until their release.

Camp.—The camp is under the immediate control of the assistant surgeon, who parades the menial servants, tells them off for duty, inspects the latrines, trenching ground, water tanks, &c., daily supervises the morning and evening roll-call of all quarantined persons, keeps a daily register, giving the names of all admissions, the camp and the number of the hut in which they have been placed, the date on which their clothes were disinfected, and how the suspects were finally disposed of. He also brings before the medical officer in charge each morning the persons who are to be discharged that day for a final examination by that officer, and finally hands them over after discharge with their baggages and tickets duly countersigned to the inspector of police for escort to the railway station. He is also in charge of all stores and equipments and their issue, brings to the notice of the medical officer persons who are destitute and have to be fed at Government expense. He keeps a daily report book for the information of the medical officer in charge. The medical officer in charge being on inspection duty every other night and part of each day, has to rely greatly on the assistant surgeon in looking after the camp. He, however, personally each morning, having given orders the previous evening, examines all suspects paraded for discharge, and, after satisfying himself as to their health, countersigns their railway tickets which have been filed in the office at the time of admission. Subsequently he inspects the camp in company with the assistant surgeon and hospital assistant, and sees all quarantined persons, listens to complaints, &c., &c. At the time of his parade all suspects are summoned by a gong and stand in front of their huts. To facilitate these orders being carried out by persons unaccustomed to discipline, the *buniah's*† shop is closed during this parade and open again immediately after it.

At present the camp contains no plague cases, and therefore also no contact cases, but it contains a number of coolies doing construction work. Under the above circumstances very strict quarantine cannot be enforced. Once, however, construction is finished, the various camps can, at any moment, be strictly segregated and communication stopped. On completion of the new *buniah's* shop between the "suspect" and "contact" camps, separate hours will be fixed for the occupants of each camp to obtain their daily supplies.

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* Railway carriage or compartment from which suspects are taken might be rapidly disinfected before being allowed to proceed. This need not take many minutes.—W. P. W.—13.3.97.

† *buniah* = grain-seller.

With a view to keeping the camps as dry as possible, suspects are not supplied with bathing water, but are allowed to bathe in the large tank at two separate ghâts, constables being stationed over each ghât to prevent any water (which is not fit for consumption) being carried away for drinking or cooking purposes.

Police.—The police force on duty consists of—

One European inspector of the Bengal Police.
Two sergeants of the Railway Police.
Two constables of the Railway Police.
Eleven head constables of the Bengal Police.
Seventy-two constables of the Bengal Police.

Of these, two sergeants, four head constables, and 18 constables are employed on platform duty in two batches, three head constables and 24 constables are employed on sentry duty in camp, and the remainder on miscellaneous duty, on escort, arms, lines, and reserve. Only one escape has taken place up to date. This suspect absconded on the 5th instant, was arrested at Dum-Dum on the 7th instant, and was back in camp in custody on the 8th instant.

Statistics.—Inspection began on the 15th February, and the average daily number of passengers examined is 3,027.

The total number of suspect passengers who have been detained in camp up to date is 273, and the maximum number quarantined on any one day was 135. These figures are largely due to the followers of the Gloucestershire Regiment, 71, and to two ships' crews paid off in Bombay, viz., 43 and 33 respectively.

Disinfecting Apparatus.—Pending the arrival of a more elaborate disinfecting apparatus, which will be ready by the end of the month, the following arrangements have been made. A steam boiler has been set up in which steam up to 50 lbs. to 100 lbs. pressure can be generated. Steam from this boiler is passed into an iron tank, in which the clothes to be disinfected are hung on iron rods. This is a "current steam" disinfector only, the tank not being made to stand pressure. The clothes are steamed for 20 minutes. Since the bacillus of plague is non-mobile, non-sporing, and is killed by exposure to a temperature of 60° C. for five minutes (Klein) or by exposure to a temperature of 80° C. Kitasato, I believe the above procedure to be sufficient, provided too many clothes are not introduced into the tank at once. In practice it has been found that, owing to the trying nature of the work, the tank becomes very hot. The hospital assistant who has been placed in charge of the disinfection is inclined to overload it with clothes, so as to finish his work quickly and get away from the heat surrounding the engine and boiler. If the number of suspect cases should increase, we will probably have to obtain the loan of the services of a European non-commissioned officer or other European who may be trusted to implicitly carry out the orders given him, since the disinfection of clothes is important, and should be thoroughly carried out, and this under native supervision must always be a matter of doubt.

I attach copies of the general rules which have been prescribed for the guidance of medical officers in charge of quarantine camps in Bengal, and also for the disinfection of infected railway carriages.

H. J. Dyson, F.R.C.S.,
Sanitary Commissioner, Bengal.

Calcutta, 12th March 1897.

General Rules to be observed by Medical Officers in charge of Quarantine Plague Camps.

1. The camps are to be divided into three parts, viz. :—

   1. The plague camp.
   2. The contact camp.
   3. The suspicious camp.

2. The plague camp, as its name implies, should be used as a hospital for actual cases of plague. In the vicinity of this camp there are huts for the accommodation of relatives and attendants of the sick.

3. In the contact camp all persons found travelling in the same railway carriage with a plague case should be segregated.

4. In the suspicious camp all persons who appear to be ill, but in whose cases a diagnosis cannot be arrived at immediately, should be segregated and their symptoms carefully watched.

5. In the event of a considerable number of people being segregated, care should be taken to keep each day's batch separate from the others.

6. Quarantine will last for seven days; the date of departure from an infected locality should be taken into consideration in this calculation.

7. The inspecting officer will meet all trains from up-country and will carefully inspect all the passengers. The railway compartments should be opened one by one, and the persons travelling in it should be locked in it again before examination of the next compartment is made. In this respect, however, the inspecting officer will exercise his discretion with regard to 1st and 2nd class passengers.

8. Rope barriers will be found useful for examination purposes.

9. An infected carriage must be cut off at once and thoroughly disinfected after the removal of the passengers to the various camps. The carriage should first be scraped down with soap and water, and then washed over with a solution of hyd. perchloride, 1—2,000.

10. All infected clothing, bedding, and articles which cannot be readily disinfected must be burnt.

11. Registers must be kept in each camp showing the date of admission, name, age, and sex, daily condition, treatment, and, finally, the result, and a daily abstract of this should be submitted to the Sanitary Commissioner, Bengal.

12. On the death of any person the medical officer will make a careful inventory of any property he may have, and shall forward the same to the district magistrate after thorough disinfection, if there is no relative at hand. Foul clothing should be burnt. The medical officer should use his discretion in this respect.

13. The excreta plague should be carefully disinfected with a solution of perchloride of mercury, 1—2,000. Sawdust should be added in sufficient quantity to allow of its being burnt.

14. Care must be taken to see that the dead are properly and completely disposed of.

15. The medical officer should understand that he is responsible for all arrangements —medical as well as sanitary—and in addition to the above rules, which are only given for his general guidance, he should exercise his discretion in all matters not provided for here.

16. He should listen to any reasonable complaints from the people who are segregated, and do all he can to rectify their grievances.

17. He is also responsible and should therefore see personally to the quality of the food and water-supply for the persons detained at the plague camps.

H. J. Dyson, F.R.C.S.,
Sanitary Commissioner, Bengal.

Calcutta, 10th February 1897.

Rules for Disinfection of Railway Carriages.

1. Any carriage in which a case of plague has been detected, after being cut off, should be thoroughly washed with soft soap and lime-water. After an interval of two or three hours this should be washed off with plain water, and then the following disinfecting solution should be thoroughly sprayed all over the interior as well as the exterior of the carriage by means of a syringe:—

Corrosive sublimate - -	½ oz.
Hydrochloric acid - -	1 „
Water - - -	3 gallons.

This solution should be allowed to dry on the carriage. Special care must be taken to direct the solution into all the cracks and crevices and jilmills.

2. After disinfection, the carriage should be kept out in the open for 48 hours. It can then be brought into use again.

3. In the case of 1st and 2nd class carriages, which afford greater facilities than 3rd class apartments for the harbouring of plague germs, it will be necessary, if the carriage

is contaminated, to burn the cushions and to disinfect the woodwork in the manner indicated above and repaint the interior.

4. Any compartment in which a suspicious case has travelled should be sprayed with the above disinfecting solution before being allowed to proceed; this can be done very rapidly and need cause no detention.

H. J. Dyson,
Sanitary Commissioner for Bengal.

Extract from the Proceedings of the Government of Bombay, General Department, No. 1670/1151-P., dated Bombay Castle, the 25th March 1897.

Report by the Collector of Ahmednagar, No. 2561, dated the 12th March 1897, forwarding the following statement of total deaths in Ahmednagar City, and making remarks :—

Statement showing the Number of Deaths that took place in the City and Suburb of Ahmednagar from 1st January to 28th February in 1893, 1894, 1895, 1896, and 1897.

Years.	January.				February.				Remarks.
	From 1st to 8th.	From 9th to 16th.	From 17th to 24th.	From 25th to 31st.	From 1st to 8th.	From 9th to 16th.	From 17th to 24th.	From 25th to 28th.	
1893	31	46	37	26	39	38	39	15	
1894	56	68	66	57	52	54	49	20	
1895	31	32	37	35	43	32	34	22	
1896	41	35	41	50	54	55	41	20	February 1896 had 29 days.
1897	36	30	43	35	44	39	34	12	

Resolution.—Recorded. This is satisfactory. Similar statements should be prepared for all large towns in which plague appears. A comparison of the actual with the normal death rate is a valuable indication of the extent to which plague prevails, and the Governor Council is glad to learn that it appears not to have taken root in Ahmednagar.

Notification No. 1728/1201 P., dated Bombay Castle, 29th March 1897.

The following new edition of general rules under Act III. of 1897 is issued in supersession of those in the following notifications :—

No. 941/398 P., dated 20th February 1897.
No. 974/452 P., dated 23rd February 1897.
No. 1001/472 P., dated 24th February 1897.
No. 1071/541 P., dated 27th February 1897.
No. 1102/586 P., dated 1st March 1897.
No. 1103/587 P., dated 1st March 1897.
No. 1114/601 P., dated 2nd March 1897.
No. 1136/632 P., dated 3rd March 1897.
No. 1195/686 P., dated 5th March 1897.
No. 1312/795 P., dated 10th March 1897.
No. 1332/822 P., dated 10th March 1897.
No. 1485/942 P., dated 16th March 1897.
No. 1520/974 P., dated 17th March 1897.
No. 1521/977 P., dated 17th March 1897.
No. 1558/1014 P., dated 19th March 1897.
No. 1647/1109 P., dated 24th March 1897.

Whereas certain parts of the Presidency of Bombay are visited by, or threatened with an outbreak of, a dangerous epidemic disease, namely, bubonic plague, and whereas the Governor of Bombay in Council is of opinion that the ordinary provisions of the law for the time being in force are insufficient for the purpose of preventing the spread thereof in parts other than the City of Bombay; pursuant to the provisions of section 2, sub-sections (1) and (2), of the Epidemic Diseases Act, 1897, and in exercise of the powers in this behalf conferred by the Governor-General in Council under section 2, sub-section (3), of the same Act, the Governor of Bombay in Council is pleased to empower the officers herein-below mentioned to take the measures herein-after specified to prevent the spread of bubonic plague, and is further pleased to prescribe the temporary regulations herein-after set forth to be observed by the public and all persons concerned.

1. In every local area where there is danger of plague, the district magistrate, subject to the general instructions of the Commissioner, may appoint special officers, either by name or by virtue of office, to devise and carry out, under the district magistrate's general directions, all measures necessary to prevent the spread of the plague.

2. The special officers appointed for any local area under these rules may be known as plague authorities.

3. At any railway station or bandar, to which no medical officer has been or may be specially appointed for inspection duty under rules sanctioned by Government concerning the inspection of travellers by rail or boat, any plague authority who may be present on duty or other officer or person specially authorised in this behalf by the district magistrate, if he reasonably believes or suspects that any person alighting or disembarking from a train or boat is suffering from bubonic plague, may detain any such person for the purpose of medical examination, and shall (if he be not himself a medical officer authorised under these rules) without delay give information of the detention to the nearest medical officer so authorised. Any station-master at a railway station where no medical officer has been posted on inspection duty may forward to the nearest station at which such a medical officer is posted any person who is or is suspected by him to be suffering from the plague. Persons entering a train or embarking on a boat shall similarly be liable to inspection and detention under this rule by the persons and under the circumstances above mentioned.

4. A plague authority or any person authorised by a district magistrate in this behalf may inspect or cause the inspection of persons leaving an infected area, and may, if any such person is suffering or is suspected by him to be suffering from plague, detain or cause the detention of such person at a place appointed for the purpose, or may forward him or cause him to be forwarded to such place.

5. At any place specially appointed by the district magistrate or by any officer empowered by him in this behalf, and situate on a road leading into a town or village, any plague authority on duty or other officer or person specially authorised in this behalf by the district magistrate may detain, for the purpose of medical examination, any person whom he reasonably believes or suspects to be suffering from the plague, and shall (if he be not himself a medical officer authorised under these rules) give information of the detention to the nearest medical officer so authorised. Authority is given to district magistrates to place inspecting officers at posts or roads leading from an infected town or village or other place in order to prevent the removal of the sick into healthy towns or villages.

6. In any town or village or other area to which this rule shall be applied by the district magistrate, an occupant of a house or building or the principal surviving member of a family shall give immediate information to the nearest plague authority of any sickness or death, due or likely to be due to plague, in such house or building or amongst the members of such family. Such plague authority (if he be not himself a medical officer) shall without delay send word to the nearest medical officer holding Her Majesty's Commission or in charge of a Government or State-aided medical institution or to a medical officer employed by a municipality not lower in grade than a hospital assistant or to any such medical officer on pension, and such medical officer, whether appointed a plague authority for the locality or not, shall be bound to come to the place indicated.

7. Immediately on receiving information under Rules 3, 4, 5, or 6, or whenever he thinks house visitation necessary, the plague authority shall go to the place indicated, and if the place be a house or dwelling-place and if the occupants thereof do not (on his demand) allow him to enter and give him reasonable facilities for ascertaining whether any of the inmates are suffering from the plague, such authority is empowered to enter into such house or any part thereof by force, and to detain, for the purpose of medical examination, any person found therein to be suffering or suspected to be suffering from the plague, or in his opinion likely to have been infected, *e.g.*, owing to his having lived in the same house with a plague patient.

8. A plague authority is empowered to have the cause of death inquired into in all cases, and, unless satisfied, to treat it as a plague case.

9. Every medical officer appointed under these rules as a plague authority is empowered to examine all persons whom he discovers or about whom he receives information under the provisions of Rules 3, 4, 5, 6, or 7, and to detain and segregate persons suffering or suspected by him to be suffering from the plague, in such places as may be appointed by the district magistrate or officer specially deputed by him in this behalf for the accommo-

dation of such persons respectively. For the purpose of segregating people the district magistrate or officer specially authorised by him in this behalf may take possession of and occupy any vacant ground or building, such compensation being afterwards made to the owner or occupier thereof as may be fixed by a Panch as provided in Rule 15.

10. If a plague authority who is specially appointed in this behalf by the district magistrate has reason to believe that any building intended or used as a dwelling is or has been occupied by a sufferer from the plague, or if it appears to him that any such building is in such an insanitary condition as to be unfit for human habitation, he may prohibit by a written order the further use of such building as a dwelling-house.

When any such prohibition has been made, no owner or occupier of such building shall use or suffer the same to be used for human habitation until the said officer gives him written permission in this behalf.

For the purpose of enforcing this regulation, the said officer may, if necessary, forcibly remove or cause to be removed any person from such building.

11. If it shall appear to a plague authority of the description stated in Rule 10 that any building used as a dwelling is so overcrowded as to endanger the health of the inmates thereof, he may, by written order, require the owner or occupier of the building, within a period to be fixed by the said authority, to abate the overcrowding thereof by reducing the numbers of inmates thereof.

For the purpose of enforcing this regulation, the said authority may, if necessary, at the expiration of the time prescribed in the written order, forcibly remove or cause to be removed such and so many of the inmates of the building as shall seem to him to be proper.

12. In the case of any building ordered to be vacated under Rules 10 and 11, and in the case of any other building or enclosure which may appear to him to be in a filthy or insanitary condition, a plague authority of the description stated in Rule 10 may require the owner or occupier to carry out, or in his default may of his own motion carry out, such measures as may seem necessary to him for the purpose of cleansing or disinfecting such building or premises, and for the purpose of such cleansing or disinfecting may, if necessary, forcibly break open and enter any such building or part of such building or premises, and may remove and disinfect or destroy any goods, clothes, or other articles found therein. The said plague authority is empowered to enter any building for the purpose of ascertaining whether it is in a filthy or insanitary condition. If the plague authority considers it necessary, he may, of his own motion, immediately and without previous notice, carry out such measures for cleansing and disinfecting as he considers necessary.

13. Such plague authority as aforesaid is empowered, with the consent of any first-class magistrate having jurisdiction in the locality, to remove or burn any huts or erections in which a case of plague has occurred or which are likely from their insanitary surroundings or conditions to give rise to the disease.

14. The district magistrate is empowered to make regulations, when he deems it necessary, for prescribing the route which shall be taken by a funeral procession from the place of death to the graveyard, burning ground, or other place for final disposal of the corpse and the places (if any) at which such procession may halt, on its way, for funeral prayers, ceremonies, or other purposes, for enforcing burial in certain places or at a certain depth, and for requiring that quicklime be placed with the corpse; and may prohibit the burial or burning of corpses of persons reasonably supposed to have died of the plague in or upon ground other than that specially assigned by him for such purposes.

15. Before the destruction of property of special value under Rule 12 or 13 the value of it shall be assessed by a Panch of three persons, including the president, who shall be an officer appointed by the district magistrate by name or by virtue of office and by general or special order. The president shall appoint the two other members. Subject to the sanction of the district magistrate or of any officer specially empowered by him in this behalf, not being lower in grade than a first-class magistrate, the award of the Panch shall be final and conclusive. A plague authority is empowered to decide whether an article which it is proposed to destroy is of sufficient value for a Panch to be called to assess its value. If he decides it is not of sufficient value, he may destroy it on the spot, and may in his discretion pay compensation to the owner: Provided, however, that no person shall be entitled as of right to claim any compensation whatsoever. It is the desire of Government that plague authorities should show liberality and promptness in

the exercise of their power to award compensation, and that, for example, a very poor man should be promptly compensated for the loss of clothes which, though of no special market value, may be of considerable value to him.

16. The police shall act under the orders given by any duly appointed plague authority with regard—

(*a*) to compelling persons to submit to such regulations as may be made or approved by the medical officers appointed for any locality under these rules for the purpose of inspection, detention, and segregation of persons suffering or suspected to be suffering from the plague; and

(*b*) to carrying out the provisions of these rules.

17. The district magistrates are to do their utmost, both personally and through others, to make it generally understood that these rules are absolutely necessary for the public safety, and to see that no needless inconvenience is caused to anyone, that examinations, &c. are carried out with as much regard as possible to sex and the customs of the country, and that everything is done to meet the wishes of the patients so far as is compatible with the public safety.

18. Within a municipal district the expenses of carrying into effect any of the measures hereby authorised for cleaning or disinfecting any building, or destroying any hut or other property, together with the cost of compensation under Rule 15 above, shall, in the first instance, if no other funds have been made specially available for the purpose, be defrayed out of municipal funds, but shall be recoverable from the owner or occupier of such building or hut under the ordinary provisions of Bombay Act VI. of 1873 in the same manner, in all respects, as if the work had been carried out under the provisions of section 77 of the said Act.

19. The plague authority may require people to adopt such measures as he thinks fit for the disinfection of their persons, vehicles, clothes, and other property when he considers that otherwise, in consequence of the risk of infection to which their persons, vehicles, clothes, and other property have been exposed, there is a danger of plague spreading. If he considers it necessary he may destroy or order the destruction of such property.

20. The district magistrate may, with the previous sanction of the Commissioner, prohibit, either wholly or subject to such restrictions as he may impose, the holding of fairs, caste feasts, or other assemblages which are likely in his opinion to assist the spread of the plague.

21. All persons practising medicine, whether qualified or not, shall report, within twenty-four hours, to the nearest plague authority any plague cases or cases of fever with glandular swellings which come to their notice.

22. All persons shall, on demand, give their names and addresses and mention their business and intentions regarding future movements to railway station-masters, plague authorities, and any other persons whom district magistrates may empower to collect such information.

23. When a person dies of the plague elsewhere than within the limits of a hospital, no one shall touch the corpse except those who undertake the necessary duties of preparing it for the funeral. Such persons shall disinfect themselves according to the orders of the plague authority or person authorised by the plague authority.

24. Every person passing by any chauki or other place provided by the district magistrate for the inspection of travellers shall submit to examination if required and to detention in any hospital or quarantine camp which may have been established for that purpose.

25. Every police patel shall prevent the entrance into his village site of any person believed by him to be suffering from the plague. If there be any such person anywhere within the limits of his village area, he shall either send him in a cart or litter to the nearest isolation hospital, or if it be too far, shall forthwith build or allot a hut for him outside the village site and detain him there until the orders of the mámlatdár are received. The companions of any such person shall also not be allowed to enter the village site, but the patel shall send them such supplies as they may require and shall give them reasonable assistance to accommodate themselves in the fields during their detention.

26. District magistrates are empowered, when they consider it necessary, to impose quarantine at any place or places against any other place or places.

27. District magistrates or plague authorities are empowered to break holes in the walls or roofs of houses or to remove roofs altogether for the purpose of admitting light and air.

28. A district magistrate is empowered to direct the evacuation of houses in the neighbourhood of an infected house or of a block of houses or a particular locality and to prohibit re-occupation of such houses or locality without permission. Notice for such period as the district magistrate thinks suitable should be given, and temporary accommodation should be provided.

29. A district magistrate, with the sanction of the Commissioner, is empowered to prohibit intercommunication between any place and any other places.

30. A district magistrate or plague authority especially authorised by him in this behalf is empowered to close places used for the supply, preparation, or storage of articles of food and drink in infected localities or in the immediate neighbourhood of infected houses, and to direct the removal of all articles of food and drink found in such places.

31. A district magistrate is empowered to prohibit the removal of plague patients from houses or sheds except in accordance with regulations framed by himself, and to take such steps as may be necessary to enforce such prohibition.

32. Disobedience to any orders issued or regulations made by a district magistrate or plague authority under these rules will subject the offender to a prosecution under section 188, Indian Penal Code.

33. The provisions of this notification are not intended to, and shall not, operate to limit in any way the powers which either the district magistrate or, within a municipal district, the municipality may possess independently of the powers hereby conferred.

34. The foregoing rules are applicable throughout the Bombay Presidency and Sind, except in the City of Bombay, subject to the following modifications in the case of cantonments and hill-stations in charge of superintendents:—

In the case of cantonments, substitute "cantonment authority" for "district magistrate."

In the case of hill-stations in charge of superintendents, substitute "superintendent" for "district magistrate."

J. DeC. Atkins,
Secretary to Government.

Letter from the INDIA OFFICE to the LOCAL GOVERNMENT BOARD.

Sir,

Dated 29th March 1897.

I am directed by the Secretary of State for India to forward copies of the telegrams and paper noted below,* regarding the risk of plague contagion being brought to the United Kingdom in bales of wool despatched from Bombay and Karachi, where the plague has now been rife for some months. According to the latest trade returns 8,729,000 lbs. of wool were despatched from Indian ports to the United Kingdom during the three months ending on the 28th February 1897. Of these despatches about four-fifths were sent from Bombay and Karachi.

It will be seen that anxiety was expressed by British manufacturers lest plague contagion should be brought to England in bales of wool. The Governments of India and Bombay have not yet been able to take effectual precautions against contamination of the wool packed and pressed in Bombay and Karachi yards. Until the report of Mr. Hankin, the bacteriologist, regarding the behaviour of the plague microbe in wool is received, Lord George Hamilton is unable to express an opinion whether the bales of wool, now on the sea or about to be despatched from Bombay and Karachi, carry any risk of plague to people who may handle the wool in England. I am to inquire whether the scientific advisers of the Local Government Board are able to give an opinion upon this point, or whether they would prefer to wait for the bacteriological report.

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* Telegram to the Viceroy, dated 3rd February 1897; telegram from the Viceroy, dated 26th February 1897; telegram to the Viceroy, dated 2nd March 1897; telegram from the Viceroy, dated 18th March 1897; telegram to the Viceroy, dated 24th March 1897; telegram from the Viceroy, dated 26th March 1897. Report by Mr. Hankin on the vitality of the plague microbe in grain. Answer given in Parliament by the First Lord of the Treasury to Mr. Godson, M.P.'s, question on the 9th February 1897.

Further I am directed to say that, as at present advised, his Lordship is not disposed to act upon the suggestion made in the latest telegram from the Government of India, that British consignees of wool from Bombay and Karachi should be warned to arrange for disinfecting their wool at the ports of arrival.

I am to request the favour of a very early reply.

I am &c.
(Signed) A. GODLEY,
Under Secretary of State.

The Secretary, Local Government Board.

Letter from the LOCAL GOVERNMENT BOARD to the INDIA OFFICE.

SIR,
Whitehall, S.W., April 2, 1897.

I AM directed by the Local Government Board to acknowledge the receipt of your letter of the 29th ultimo (R. & S. 1079) and enclosures, with reference to the risk of plague contagion being brought to the United Kingdom in bales of wool despatched from Bombay and Karachi.

In reply, I am to state, for the information of the Secretary of State for India, that the Board are informed by their Medical Officer that he is not aware of any evidence to show that there is danger to the United Kingdom merely because of the arrival of bales of wool from ports where plague is prevalent, and that the discovery of the plague bacillus after a certain number of days in an article that had been purposely inoculated with that bacillus ought not, in his judgment, to be regarded as affording proof that the article in question, whether it be wool or any other substance, was likely in the ordinary trade processes, to convey that infection. I am to add that at the Venice Conference it was decided that raw wools (Laines brutes) were to be regarded as "susceptibles," this attitude being adopted, not because it was known that animals from which wool is derived were liable to plague, or that wool from diseased animals was likely to possess the infective property of plague, but because it was not possible to deny that wool might become infective during the processes to which it was subjected before being shipped.

The Venice Convention, however, contains no prohibition against the importation of wool from infected places, nor does it require disinfection to be carried out before wool is received into a country, these points being left to the discretion of the importing country.

I am to add that if the Government of India consider that wool is subjected to processes in infected ports of India which are likely to result in the bales being exposed to actual infection by plague, it seems to the Board that the action necessary to prevent risk in this way should be adopted in India, and not be thrown upon the sanitary authorities of the ports of arrival in this country.

I am, &c.
(Signed) ALFRED D. ADRIAN
Assistant Secretary.

The Under Secretary of State for India,
India Office, S.W.

Letter from the INDIA OFFICE to the LOCAL GOVERNMENT BOARD.

SIR,
May 25, 1897.

WITH reference to Mr. Adrian's letter, No. 48,242 K. (2), dated the 2nd April 1897, I am directed by the Secretary of State for India to forward copies of further telegrams* on the subject of possible risks from wool imported from India into the United Kingdom.

From the 1st October to the 28th February last 10,000,000 lbs. of wool were exported from Bombay and Karachi to the United Kingdom. So far as is known, no cases of plague have occurred among the classes dealing with or using this Indian wool. If the Local Government Board are still of the opinion expressed in Mr. Adrian's letter cited above, Lord George Hamilton would propose not to take any steps for stopping or controlling the wool exports from Western India.

I am, &c.
(Signed) HORACE WALPOLE.

The Secretary, Local Government Board.

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* Telegram to the Government of India, dated 3rd April 1897, from the Government of India, dated 4th May 1897.

Quarantine Arrangements in regard to Indian Ports—*continued*

Registered Number.	From.	Date.	Places where Quarantine is imposed.	Duration of Quarantine.
935/97	Foreign Office	15th March	Russia	Quarantine stations established at Theodosia, Kertch, Baku, and Astrakan; quarantine agencies at Odessa, Sebastopol, Novorossik, Batoum, and Poti. Stations of medical observation at other ports. Rules of 1894 (Chinese plague) applied to ports of Black Sea and Sea of Azov. Ships from infected ports to repair to a quarantine station for 10 days; passengers not to land.
936/97	„	15th „	Spain	Text of 765/97.
937/97	„	15th „	Austro-Hungary	Text of 893/97.
974/97	„	17th „	France	Arsenicated and drysalted goods admitted to Marseilles.
984/97*	„	18th „	„	Report by Commissioner of Health respecting regulations to be adopted.
985/97	„	18th „	„	Marseilles.—Undressed leather, hides, rags, animal matters, wool, prohibited even in transit. Carpets and oil seeds, coprah, whether in bag or bulk, to be disinfected. If no case of illness or death during voyage passengers undergo medical visit and disinfected before landing. Steamers with cargoes for other ports discharge other cargo in quarantine.
986/97	„	18th „	Persia	Roads to Afghanistan either closed or quarantine of 15 days imposed. Only one road to Baluchistan allowed open. Quarantine at Bunder Abbass, Lingah, and Muhamrah.
987/97	„	18th „	Roumania	Sacks from India transhipped at English ports allowed to enter Sulina and Constanta after disinfection.
1001/97	„	19th „	Persia	Complaint against inadequacy of quarantine at Bushire. Fifteen days' quarantine on arrivals from Bussorah.
1002/97	„	19th „	Greece	Text of 910/97.
1003/97	„	19th „	Turkey (Mesopotamia)	Travellers can only enter Mesopotamia between Bayazid and Khanakin.
1004/97	„	19th „	Russia	Details of arrangements adopted.
			Germany	Untanned skins and hides admitted if (1) port free from plague; (2) despatched after 11th February; (3) compressed into bales and airtight; (4) prepared for transport in harbour, port of departure. Bombay and Karachi excluded from this favourable treatment.
			Baghdad	Text of 538/97.
			Germany	Prohibition in 615/97 extended to goods from India transhipped in Europe.
1026/97	„	20th „	Turkey	Susceptible goods from any Indian port disinfected at a lazaret; if transhipped in foreign port same measures unless received in free pratique in port of transhipment. Jute sacking classed as susceptible.
1042/97	„	22nd „	„	Proposal of Lord Salisbury to protest against the closing of the Dardanelles to ships from India or Baluchistan unless they have passed 15 days' quarantine in Ottoman or foreign lazaret.
1049/97	„	23rd „	Peru	Ships from India (1) clean bill of health have free pratique, (2) from infected ports 10 days' quarantine, even though previously calling at other ports, but cargo cannot be discharged.
1054/97	„	24th „	Marseilles	Probable measures as to disinfection of cargoes from infected ports.
			Hamburgh	Prohibited articles repulsed if transhipped in European ports.
1055/97	„	24th „	Madagascar	Pratique refused to all vessels from infected Indian ports. Mozambique open.
1056/97	„	24th „	Germany	Drysalted and arsenicated hides not admitted.
1057/97	„	24th „	Reunion	Rice and grain in bags from Bombay and Mauritius to be placed in new disinfected bags. No susceptible articles admitted.
1071/97	„	25th „	Italy	Arsenicated and drysalted hides prohibited.
1073/97	„	25th „	Burmah	Repulse of the "Assyria" from Bombay.
1074/97	„	25th „	Bulgaria	Importation forbidden from contaminated countries of used and soiled paper, old newspapers, and all kinds of printed paper used as wrapping.
1124/97	„	30th „	Russia	Continental parts of British India considered infected. Ceylon declared clean.
1139/97	„	1st April	Germany	Articles named in 615/97, which left India before plague, and since warehoused in Great Britain, admitted to non-Prussian ports.
1144/97	India	2nd „	Russia	Protest against prohibition to import tea into Batoum.
1145/97	Foreign Office	2nd „	Turkey	Prohibition withdrawn respecting ships from India passing the Dardanelles.
1147/97	„	2nd „	Russia	Pilgrims forbidden to visit Palestine at Easter.
1186/97	„	5th „	French Guiana	Drills, rags, green hides, carpets, effects, and bedding, in use or unused, admitted in quarantine ports after steam disinfection.
1193/97	Colonial Office	6th „	Reunion	Same as 1057/97.

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* Superseded by rules in 909/97.

QUARANTINE ARRANGEMENTS in regard to INDIAN PORTS—*continued.*

Registered Number.	From.	Date.	Places where Quarantine is imposed.	Duration of Quarantine.
1194/97 -	Foreign Office -	7th April -	Persia - - -	Regulations—amplification of 986/97.
1205/97 -	„ -	7th „ -	Roumania - -	Rules in 987 will not be modified.
1206/97 -	„ -	7th „ -	„ - -	New jute bags admitted without disinfection in certain cases.
1207/97 -	„ -	7th „ -	Bulgaria - -	British representations respecting rice and jute bags.
1208/97 -	„ -	7th „ -	Germany - -	Protest of tanners in Berlin respecting prohibition against import of raw hides and skins from India.
1223/97 -	„ -	9th „ -	Bulgaria - -	Rice admitted from Rangoon.
1224/97 -	„ -	9th „ -	Marseilles - -	Vessels from Persian Gulf and infected ports undergo 36 hours' quarantine; linen and effects of passengers and crew and accessible parts of vessel disinfected; if healthy, can discharge in lighter. Prohibited goods kept in quarantine if no certificate of origin from healthy ports.
1292/97 -	„ -	17th „ -	Portuguese India -	Complaint that medical men and other requirements are not allowed to cross into Portuguese India.
1310/97 -	„ -	21st „ -	Russia - -	Protest from English Ambassador against severity of Russian regulations.
1316/97 -	„ -	22nd „ -	Belgium - -	Contemplated modification of rules. Inquiry as to ports and localities infected.
1324/97 -	„ -	22nd „ -	Persia - -	"Persepolis" ordered to watch entrance to Persian Gulf. Doctors and Cossacks sent by Russian Government to Afghan-Persian frontier.
1410/97 -	„ -	4th May -	Germany - -	Importation of untanned air-dried hides from India allowed; restrictions in 1004/97 withdrawn.
1418/97 -	„ -	6th „ -	France - -	Prohibition to import rags, fresh offal, hoofs, and shoes from infected areas. Raw and manufactured wool, used or unused body linen, wearing apparel, and bedclothes, raw leather, and fresh skins admitted from infected area after disinfection.
1432/97 -	„ -	10th „ -	Germany - -	Rules in 1139/97 extended to Prussian ports.
1433/97 -	„ -	10th „ -	Russia - - -	Representation to Russian Government respecting prohibition against importation of tea into Batoum.
1434/97 -	„ -	10th „ -	Belgium - -	New rules. List of prohibited articles.
1465/97 -	„ -	12th „ -	Persia - - -	Report on quarantine arrangements; Jask considered preferable to Ormuz as quarantine station.
1474/97 -	„ -	14th „ -	Bulgaria - -	Rangoon not considered contaminated; importation of rice allowed. Jute sacks from Calcutta admitted after disinfection.
1475/97 -	„ -	14th „ -	Belgium - - -	Further rules; hides admitted if salted and arsenicated.
1513/97 -	„ -	15th „ -	Reunion - -	All Indian ports declared infected. Ships laden with rice repulsed.
1534/97 -	„ -	22nd „ -	Switzerland - -	New regulations; arsenically cured hides admitted.
1542/97 -	„ -	24th „ -	Reunion - -	French Government are unable to modify the rules respecting imports from India.

INDIA—OUTBREAK OF PLAGUE.

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No. III.

(IN CONTINUATION OF [C. 8511].)

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INDIA—OUTBREAK OF PLAGUE.

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RELATING TO THE

OUTBREAK OF PLAGUE IN INDIA.

No. III.

(IN CONTINUATION OF [C. 8511].)

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From GOVERNOR, BOMBAY.

14th June 1897.

In continuation of previous telegram about plague.

Deaths from all causes in Bombay city for the week ending 11th of June, 553, reported plague deaths, 21. Poona city, for the week ending 11th of June, deaths from all causes, 57; reported plague deaths, 3; plague cases, 2. Local cases for the week ending 11th of June:—Surat district, 13 cases, 12 deaths; Thana district, 11 cases, 9 deaths; Ratnagiri district, 2 cases 2 deaths; Kolaba district, 13 cases 12 deaths; Kathiawar, 2 cases, 1 death; Cutch, 309 cases, 309 deaths; Baroda, 8 cases, 5 deaths. Of the Cutch cases and deaths 116 are of earlier date but not previously recorded. During past week, plague deaths, Karachi, 6; Hyderabad, none; Sukkur, none; Rohri, four. Elsewhere in Sind, 1 case 1 death.

From SECRETARY OF STATE to VICEROY.

19th June 1897.

Plague reported at Jeddah, 28 deaths in one day; 2,500 Indian pilgrims in Hedjaz still uninfected; two steamers expected shortly to carry them to Bombay.

From GOVERNOR, BOMBAY.

20th June 1897.

In continuation of previous telegram about plague.

Deaths from all causes in Bombay city for week ending 18th June, 530. Reported plague deaths 22. Poona city, for week ending 18th June, deaths from all causes, 57; 1 reported plague death; 3 plague cases. Local cases for week ending 18th June:—Surat District, no case, one death; Thana District, 12 cases, 9 deaths; Ratnigiri District, 3 cases, 3 deaths; Kolaba District, 7 cases, 7 deaths; Cutch, 104 cases, 105 deaths; Kolhapur, 4 cases, 1 death; Baroda, 8 cases, 6 deaths. Of the Thana District, 7 cases, and 5 deaths were of earlier date but not previously recorded. During past week plague deaths, Karachi 1, Rohri 1.

From SECRETARY OF STATE to VICEROY.

23rd June 1897.

Plague at Jeddah. Turkey has prohibited any pilgrims going to Mecca through Jeddah. Intending pilgrims must now go from Camaran to Yembo. Removal of indigent Indian pilgrims, estimated at 500, from Jeddah is requested. Please arrange for this being done.

From VICEROY.

24th June 1897.

Your telegram of 19th June. We have received information already from British Consul at Jeddah, and necessary precautions taken as regards returning pilgrims.

From GOVERNOR, BOMBAY.

28th June 1897.

In continuation of previous telegram about plague:—

Deaths from all causes in Bombay city for week ended 25th June, 520; reported plague deaths 22. Poona city, for week ended 25th June, deaths from all causes 108; reported plague deaths one; plague cases none. High death-rate due to cholera. Local cases for week ended 25th June :—Surat district, 1 case, 1 death ; Thana district, 4 cases, 1 death ; Ratnigiri district, 1 case, 1 death ; Kolaba district, 11 cases, 10 deaths ; Poona district, 4 cases, 2 deaths ; Kathiawar none ; Cutch, 83 cases, 60 deaths ; Kolhapur, 1 case, 1 death ; Baroda, 1 case, 1 death ; Janjira, 2 cases, 1 death. Amongst Europeans, 1 case, no death. During past week, plague deaths, Karachi 2, Rohri 2 ; 1 other plague death in Sind.

From GOVERNOR, Bombay.

4th July 1897.

In continuation of previous telegram about plague :—

Deaths from all causes in Bombay city for the week ending 2nd July, 534 ; reported plague deaths, 12. No cases or deaths Poona city ; 3 cases, 3 deaths in suburbs and cantonment districts. Thana, 2 cases, 1 death ; Kolaba, 2 cases 6 deaths ; Poona, 2 cases, 1 death ; Cutch, 56 cases 41 deaths ; Baroda, 1 case, 2 deaths ; Janjira, 1 case, no deaths ; Karachi city, 2 cases, 2 deaths ; Sukkur, 1 death of old case. Elsewhere none reported.

From GOVERNOR, Bombay.

4th July 1897.

Deccan Subha Memorial, dated 10th May, and petition were not received till 21st May, by which time the search, limewashing and disinfecting parties had been discontinued and military camp broken up. Statements in petition grossly misleading. See paragraph A. of petition. People only sent to hospital after careful medical examination, and if showing symptoms indicative of possible plague. B. Greatest care was taken not to remove to segregation camp any but those necessary to keep under observation. Time was allowed for preparation, and one member of household was allowed to stay behind to look after property. C. I have not yet heard any allegations of indignity being substantiated. I know that gentleness and consideration were shown. D. Native gentlemen were asked to accompany search parties, and did so to the very end. They were specially desired to bring to notice all complaints which reached them and to mark down any offending soldier and report to officers. E. Search parties were instructed to have regard to religious feelings. Possibility of abuse of those feelings minimised by the presence of native gentlemen. F. Special care was taken to avoid needless destruction of property and compensation given for property destroyed. G. No unnecessary violence was used in entering houses. H. I do not believe the possibility of indignity to native women, owing to presence of lady doctors and other ladies with the search parties. I. Officers were in plentiful attendance, and it was made known that complaints should be made to them. See also D. as to agency employed. English soldiers amounted to little more than one-third of total number, remainder being Native. English soldiers employed mainly for search parties, and their employment certainly not more calculated to cause annoyance than employment of Natives, and experience showed for this work the necessity for European agency where procurable. In Poona the only European agency obtainable on a large scale was military. Results show the great efficiency of system adopted. I went to Poona to see about ladies and native gentlemen accompanying search parties ; called together leaders of communities and explained what must be done, and that all regard would be paid to religious and other feelings, and asked their aid. I visited Poona twice during operations for inquiry and discussion with Rand and others ; never could I find serious complaints substantiated. I kept close touch, hearing from Rand daily. No specific charge of misconduct was made to me during progress of the operations. I give strongest and most emphatic contradiction to the statement that search parties exceeded instructions and grossly misconducted themselves. The search parties when at work were under commissioned and non-commissioned officers. One of the ladies, Miss Bernard, having 20 years' experience Zenana work, and most sympathetic to natives, authorises me to say that she was much struck by the gentleness of the officers and the control of the soldiers, that the officers impressed on the men the delicate nature of their duties, that after the first day or two, when there was some little apprehension, which was easily allayed by the ladies and native gentlemen accompanying the search parties, they were met with cheerfulness, that Rand listened to all complaints and suggestions, and was kind and courteous to all. In Rand the Civil Service loses a most able and devoted officer. From inquiries made from various sources, I am convinced that Poona owes gratitude to officers and men, English and Native, for the duties so well and so considerately performed.

From SECRETARY OF STATE to VICEROY.

5th July 1897.

Following telegram was sent to Aden, 5th July :—

"Plague. Constantinople Board of Health desire bills of health given to every sailing vessel and sambuk from Aden to Red Sea ports, stating destination, number of crew and passengers, and nature of cargo."

From SECRETARY OF STATE to RESIDENT, ADEN.

5th July 1897.

Plague. Constantinople Board of Health desire bills of health given to every sailing vessel and sambuk from Aden to Red Sea Ports stating destination, number of crew and passengers, and nature of cargo.

From SECRETARY OF STATE to GOVERNOR, BOMBAY.

7th July, 1897.

Please telegraph names of ladies, English and Indian, who accompanied Poona search parties, distinguishing lady doctors. Question in Parliament, Friday. What is total number of lady doctors in Poona, and their names ?

From GOVERNOR, BOMBAY.

8th July, 1897.

Your telegram of 7th July. Lady doctors engaged with search parties were :—Miss Bernard, M.D., Miss Crawley, L.R.C.P., Miss Dids, Hospital Assistant, Mrs. Goodall, a Parsee with some medical qualifications. Other ladies were Mrs. Taylor, Miss Kelly, Mrs. Fernandez, Mrs. Balubai Awte, Hindu, Mrs. Bhimabai Awte, Hindu, Miss E. Bernard, Miss Tarkhad, Hindu, Miss McIntosh, the Hong Kong nurse, when not employed as a nurse. As far as I can learn, there is only one other lady in Poona with medical qualifications. Street inspection mentioned in Rand's letter of 9th April last arose thus:—When searching was first instituted, women in many houses remained in dark rooms, where it was impossible to see whether they were ill, so householders were desired to cause their women to come into open place, such as reasonably light room or courtyard or street, merely that it might be seen whether they looked ill. If there appeared reason for actual medical examination, it was conducted with every regard for decency, not in public, and in case of women never by any one but a woman, unless no objection was raised to examination by a commissioned medical officer. Allegation that women were stripped in street to detect plague symptoms is malevolent fabrication. The native gentlemen and lady doctors must have been cognisant of street inspection, as of all that went on.

From GOVERNOR, BOMBAY.

12th July, 1897.

In continuation of previous telegram about plague.

Deaths from all cases in Bombay city for week ending 9th July, 590; reported plague deaths, 3; Poona city, one case suburbs, and cantonment 18 cases, 3 deaths, due to outbreak in lines of 2nd Bombay Lancers at Lonowli. Poona district, 5 cases, 3 deaths. At Karad, Satara district, 5 cases, no deaths. Districts:—Surat, 28 cases, 10 deaths; Kolaba, 9 cases, 5 deaths; Kolhapur, 1 case, no death; Baroda, 21 cases, 13 deaths; Cutch, 32 cases, 23 deaths; Karachi city, 2 cases, 2 deaths. None elsewhere in Sind.

From GOVERNOR, BOMBAY.

18th July, 1897.

In continuation of previous telegram about plague.

Deaths from all causes in Bombay city for the week ended 16th July, 609; reported plague deaths, 11. In Poona city no plague; in cantonment and suburbs, 8 cases, 5 deaths; Lanowli, 10 cases, 8 deaths; Karad, 26 cases, 14 deaths. Districts:—Surat, 17 cases, 13 deaths; Kolaba, 4 cases, 3 deaths; Kolhapur, 1 case, no death; Baroda, 22 cases, 22 deaths; Cutch, 27 cases, 23 deaths; Karachi city, 4 cases, 2 deaths. None elsewhere.

From VICEROY.

19th July, 1897.

Your telegram of 23rd June. Removal of indigent pilgrims from Jeddah. British Consul at Jeddah telegraphed on 15th July plague considered practically extinct; 1 death, no case in 11 days. In order to accelerate despatch indigent pilgrims, it will be necessary to charter steamer at Rs. 19,000, and cost of procuring passages when rates cheaper would not be less than Rs. 12,000. Under present circumstances, it seems to us unnecessary to incur expenditure in removing indigent pilgrims.

From GOVERNOR, BOMBAY.

26th July 1897.

In continuation of previous telegram about plague:—

Deaths from all causes in Bombay city for week ended 23rd July, 687; reported plague deaths, 9. In Poona city, 1 case, 1 death; suburbs and cantonments, 9 cases, 10 deaths. Lanowli, 34 cases, 12 deaths; Karad, 45 cases, 26 deaths. Districts:—Surat, 10 cases, 4 deaths; Kolaba, 6 cases, 4 deaths; Kolhapur, no case, 1 death; Baroda, 3 cases, 2 deaths; Cutch, 26 cases, 14 deaths; Karachi city, 5 cases, 4 deaths. No indigenous cases elsewhere.

From SECRETARY OF STATE to VICEROY.

30th July 1897.

My telegram of 1st June, Italy. Prohibition to import raw hides withdrawn.

From GOVERNOR, Bombay.

2nd August 1897.

In continuation of previous telegram about plague.

Deaths from all causes in Bombay city for the week ended 30th July, 935 ; reported plague deaths, 16. The high death-rate is subject of very careful inquiry. I am informed that it is certainly not due to any disease with bubonic symptoms. Cholera accounts for considerable portion of increase, rest due mainly to dysentery, diarrhœa, and lung diseases. Poona city, 7 cases, 1 death ; suburbs and cantonment, 6 cases, 4 deaths ; Kirkee cantonment, 14 cases, 12 deaths ; Lanowli, 32 cases, 34 deaths ; remainder Poona district, 2 cases, no death ; Karad, 62 cases, 43 deaths ; Surat district, 5 cases, 5 deaths ; Kolaba district, 4 cases, 3 deaths ; Baroda district, 4 cases, 3 deaths ; Kolhapur district, 4 cases, 3 deaths ; Cutch, 44 cases, 33 deaths ; Karachi city, 2 cases, 1 death. Elsewhere none.

From GOVERNOR, Bombay.

5th August 1897.

Deccan Sabha petition. Of the 1,699 signatures, 721 have been examined ; of these only 144 could be found, the remaining 577 not being found nor traceable, and not known. Of the 144 found, 14 deny their signatures ; the rest say they were induced by agents of the Deccan Sabha and the "Dayan Prakash" newspaper, to sign a petition about plague measures, but 50 did not know what they were signing. Different objects held out :—More street lamps ; for fixing price of grain ; against additional taxation ; reduction of market rents. Bhide, first signatory, admits he worked with troops from first to last, never missing a day of his turn to accompany search parties, and that he never saw any misconduct. Nawab Abdul Khan says he signed in his private capacity, never having seen memorial, knowing nothing of its contents, and never having seen any misconduct. He has been deposed from place of leader of Mahomedan community, the Mahomedans denying that they have any complaint to make against plague operations.

From GOVERNOR, Bombay.

9th August 1897.

In continuation of previous telegram about plague.

Deaths from all causes in Bombay city for week ended 6th August, 1,038 ; reported plague deaths, 8. Poona city, 5 cases, 4 deaths ; suburbs and cantonment, 11 cases, 3 deaths ; Kirkee cantonment, 55 cases, 44 deaths ; Lanowli, 36 cases, 33 deaths ; remainder Poona district, 19 cases, 13 deaths ; Karad, 95 cases, 65 deaths ; elsewhere, *Satara district, 1 case, 1 death ; Surat city, 2 cases, 2 deaths ; Surat district, none ; Ahmednagar district, 2 cases, 2 deaths ; Kolaba district, 1 case, no death ; Igatpuri, 14 cases, 12 deaths ; Baroda district, none ; Kolhapur district, 3 cases, 1 death ; Palanpur district, 8 cases, no death ; Cutch district, 55 cases, 31 deaths ; none in Sind.

From GOVERNOR OF BOMBAY to SECRETARY OF STATE,

15th August, 1897.

In continuation of previous telegram about plague.

Deaths from all causes in Bombay city for the week ended 13th August, 933 ; reported plague deaths, 10. Bacteriological inquiry has failed to connect high death-rate with bubonic plague. Poona city, 9 cases 7 deaths ; suburbs and cantonments, 5 cases 5 deaths ; Kirkee cantonment, 88 cases 62 deaths ; Lanowli, 38 cases 24 deaths ; remainder of Poona district, 1 case, 3 deaths ; Karad, 117 cases, 102 deaths ; elsewhere in Satara district, 35 cases, 17 deaths ; Surat city, 1 case, no death ; Kalyan, Thana district, 2 cases, no death ; Kolaba district, 6 cases, 4 deaths ; Igatpuri, 6 cases, 5 deaths ; Baroda districts, 4 cases, 3 deaths ; Kolhapur districts, 3 cases, 3 deaths ; Palanpur districts, 5 cases, 3 deaths ; Cutch districts, 52 cases, 30 deaths. Elsewhere no indigenous plague ; none in Sind.

From SECRETARY OF STATE to VICEROY.

18th August 1897.

Plague. Your telegram of 19th July last. Foreign Office proposes that repatriation of indigent pilgrims should be left in the hands of Government of India. I agree.

From VICEROY.

21st August 1897.

No plague case at Karachi since 27th July, and no death since 25th July. Port declared healthy within meaning of Chapter 2, Section 2, Venice Convention. Foreign Governments informed. Withdrawal of quarantine against Karachi at Aden and other Indian ports approved.

From GOVERNOR, BOMBAY.

22nd August 1897.

In continuation of previous telegram about plague.

Deaths from all causes in Bombay city for week ended 20th August, 977 ; reported plague deaths, 21 ; Poona city, suburbs, and cantonments, 19 cases, 9 deaths ; Kirkee cantonments, 102 cases, 83 deaths ; Lanowli, 16 cases, 6 deaths ; remainder of Poona district, 28 cases, 15 deaths ; Karad, 155 cases, 111 deaths; elsewhere, Satara district, 56 cases, 21 deaths ; Surat city, 9 cases, 4 deaths ; Thana district, 8 cases, 9 deaths ; Kolaba district, 13 cases, 9 deaths ; Igatpuri, 16 cases, 8 deaths ; Baroda district, 2 cases, 2 deaths ; Kolhapur district, 2 cases, 1 death ; Palanpur districts, 2 cases, 5 deaths ; Cutch districts, 37 cases, 26 deaths.

From GOVERNOR, BOMBAY.

29th August 1897.

In continuation of my telegram of to-day. High death-rate in Bombay city is ascribed principally to cholera and bowel diseases, owing to presence in city of underfed impoverished people from mofussil. Cases of cholera are treated with same precautions as plague cases. Death-rate decreasing ; cholera and pneumonia diminishing. Scheme for more complete death registration under consideration.

From GOVERNOR, BOMBAY.

29th August 1897.

In continuation of previous telegram about plague.

Deaths from all causes in Bombay city for the week ended 27th August, 848 ; reported plague deaths, 17. Poona city, suburbs and cantonments, 22 cases, 12 deaths ; Kirkee cantonment, 136 cases, 76 deaths ; Lanowli, 39 cases, 19 deaths ; remainder Poona district, 76 cases, 46 deaths ; Karad, 239 cases, 181 deaths ; elsewhere Satara district, 119 cases, 84 deaths ; Surat city, 10 cases, 4 deaths ; Surat district, 4 cases, 1 death ; Thana district, 12 cases, 11 deaths ; Kolaba district, 6 cases, 5 deaths ; Igatpuri, 27 cases, 17 deaths ; Baroda districts, 5 cases, 2 deaths ; Kolhapur district, 1 case, no death ; Palanpur districts, 11 cases, 4 deaths ; Cutch districts, 78 cases, 51 deaths.

From GOVERNOR, BOMBAY.

6th September 1897.

In continuation of previous telegram about plague. Deaths from all causes in Bombay city for the week ended 3rd September, 796 ; reported plague deaths, 29. During past week relapsing fever found to exist in Bombay city. Poona city, suburbs and cantonments, 13 cases, 12 deaths; Kirkee cantonment, 193 cases, 111 deaths; Lanowli, 8 cases, 11 deaths; remainder of Poona district, 62 cases, 52 deaths; Karad, 291 cases, 235 deaths; elsewhere Satara district, 230 cases, 143 deaths; Surat city, 12 cases, 5 deaths; Surat district, 9 cases, 5 deaths; Thana district, 25 cases, 16 deaths; Kolaba district, 3 cases, 2 deaths; Ahmednagar district, 1 case, 1 death; Igatpuri, 83 cases, 68 deaths; Baroda districts, 3 cases, 5 deaths; Kolhapur districts, 2 cases, 1 death; Palanpur districts, 35 cases, 22 deaths; Cutch districts, 63 cases, 60 deaths.

From GOVERNOR, Bombay.

13th September 1897.

In continuation of previous telegram about plague. Deaths from all causes in Bombay city for the week ending 10th September, 840. Reported plague deaths, 26. Poona city, suburbs and cantonments, 22 cases, 15 deaths; Kirkee cantonment, 114 cases, 96 deaths; Lanowli, 7 cases, 7 deaths; remainder Poona district, 102 cases, 79 deaths; Karad, 130 cases, 100 deaths; elsewhere Satara district, 207 cases, 148 deaths; Surat city, 32 cases, 22 deaths; Surat district, 16 cases, 11 deaths; Thana district, 17 cases, 9 deaths; Kolaba district, 22 cases, 16 deaths; Ratnagiri district, 11 cases, 10 deaths; Igatpuri, 109 cases, 91 deaths; Baroda districts, 6 cases, 4 deaths; Kolhapur districts, 4 cases, 3 deaths; Palanpur districts, 28 cases; 13 deaths, Cutch districts, 125 cases, 101 deaths.

From GOVERNOR, Bombay.

16th September 1897.

It may be necessary to request you to send several young English doctors for plague work. Military requirements caused withdrawal of many doctors from Bombay. Monthly salary, Rs. 500. This only intended as warning.

From GOVERNOR, Bombay.

20th September, 1897.

In continuation of previous telegrams about plague. Deaths from all causes, Bombay city, week ending 17th September, 914; reported plague deaths, 35. Poona city, suburbs and cantonments, 66 cases, 41 deaths; Kirkee cantonment, 57 cases, 44 deaths; Lanowli, 7 cases, 3 deaths; remainder Poona district, 104 cases, 76 deaths; Karad, 102 cases, 84 deaths; elsewhere Satara district, 294 cases, 222 deaths; Surat city, 29 cases, 13 deaths; Surat district, 8 cases, 5 deaths; Thana district, 23 cases, 18 deaths; Kolaba district, 21 cases, 16 deaths; Ratnagiri district, 1 case, no death; Igatpuri, 54 cases, 41 deaths; Baroda districts, 10 cases, 7 deaths; Kolhapur districts, 2 cases, 1 death; Palanpur districts, 81 cases, 43 deaths; Cutch districts, 123 cases, 114 deaths. Europeans 1 case.

From GOVERNOR, Bombay.

27th September 1897.

In continuation of previous telegram about plague. Deaths from all causes in Bombay city for week ending 24th September, 854; reported plague deaths, 46. Poona city, suburbs and cantonments, 100 cases, 74 deaths; Kirkee cantonment, 24 cases, 18 deaths; Lanowli, 11 cases, 8 deaths; remainder Poona district, 108 cases, 76 deaths; Karad, 67 cases, 50 deaths; elsewhere Satara district, 417 cases, 306 deaths; Surat city, 39 cases, 24 deaths; Surat district, 19 cases, 15 deaths; Thana district, 32 cases, 25 deaths; Kolaba district, 20 cases, 17 deaths; Ratnagiri district, 1 case, 1 death; Igatpuri, 69 cases, 55 deaths; Ahmednagar district, 2 cases, 1 death; Baroda districts, 6 cases, 2 deaths; Palanpur districts, 84 cases, 50 deaths; Cutch districts, 128 cases, 106 deaths. Europeans, 3 cases, 1 death. Systematic searching has been resumed in Poona cantonment and about to be resumed Poona city. The leaders of people have been consulted and operations will be conducted with their assistance and with special regard to their wishes and suggestions.

From GOVERNOR, BOMBAY.

1st October 1897.

In continuation of previous telegram of 16th September.
(1.) Please send as soon as possible 12 doctors.
(2.) One case plague, Karachi.

From SECRETARY OF STATE to VICEROY.

1st October 1897.

Reuter telegram in yesterday's papers reported attack on plague party at Igatpuri. Is this true? If so, please report casualties.

From GOVERNOR, BOMBAY.

4th October 1897.

In continuation of previous telegram about plague. Deaths from all causes in Bombay city for the week ending 1st October, 760; reported plague deaths, 52. Poona city, suburbs and cantonments, 166 cases, 110 deaths; Kirkee cantonment, 17 cases, 5 deaths; Lanowli, 3 cases, 5 deaths; remainder Poona district, 124 cases, 109 deaths; Karad, 92 cases, 73 deaths, which includes 50 cases, 43 deaths of previous weeks; elsewhere Satara district, 598 cases, 433 deaths; Surat city, 26 cases, 24 deaths; Surat district, 11 cases, 10 deaths; Thana district, 10 cases, 11 deaths; Kolaba district, 11 cases, 11 deaths; Ahmednagar district, 2 cases, 2 deaths; Igatpuri, 47 cases, 41 deaths; Sholapur city, 11 cases, 5 deaths; Baroda districts, 9 cases, 11 deaths; Palanpur districts, 61 cases, 38 deaths; Cutch districts, 122 cases, 106 deaths; Europeans, 3 cases, no death. One death from plague is stated by one doctor to have occurred in Karachi; no other cases reported there.

From SECRETARY OF STATE to VICEROY.

5th October 1897.

My telegram of 1st October. Attack plague party. I shall be glad of a very early reply.

From SECRETARY OF STATE to GOVERNOR, BOMBAY.

6th October 1897.

Your telegram of 1st October. I hope to despatch 12 doctors by next week's mail. Offer of service received from suitable woman doctor, whom I propose to send unless you see objection. Have not military requirements affected your supply of nurses? If so, how many more do you require? Am anxious that efficiency plague hospitals should not suffer for want of competent nurses.

From VICEROY.

6th October 1897.

Your telegram, 1st October. Party of Assistant Surgeon, Mamlatdar, and three others, inquiring as to suspected plague at Ghori were mobbed by villagers and all beaten except Mamlatdar. Right arm of Assistant Surgeon broken, and badly hurt on head and chest; is improving. No search had been made by party. Fourteen arrests made.

From SECRETARY OF STATE to GOVERNOR, BOMBAY.

8th October 1897.

My telegram of 6th October. Eight doctors for plague duty leave to-night for Bombay by Brindisi, four more and one woman doctor leave next Thursday, Marseilles. Names and description sent by post. One additional candidate provisionally selected as eligible. Shall I send him as 13th man on Thursday? It is suggested that these doctors should be immunised by Haffkine on arrival.

From GOVERNOR, BOMBAY.

9th October 1897.

No further plague, Karachi, since death on 27th September, referred to in my telegram of 1st October.

From GOVERNOR, BOMBAY.

9th October 1897.

Your telegrams of 6th and 8th October. Please send thirteenth doctor and twelve nurses as soon as possible.

From GOVERNOR, BOMBAY.

12th October 1897.

In continuation of previous telegram about plague. Deaths from all causes in Bombay city for week ending 8th October, 781; reported plague deaths, 38. Poona city, suburbs and cantonments, 199 cases, 143 deaths; Kirkee cantonment, 7 cases, 10 deaths; Lanowli, 10 cases, 4 deaths; remainder Poona district, 110 cases, 82 deaths; Karad, 22 cases, 15 deaths; elsewhere Satara district, 716 cases, 569 deaths; Surat city, 34 cases, 18 deaths; Surat district, 4 cases, 3 deaths; Thana district, 16 cases, 9 deaths; Kolaba district, 7 cases, 9 deaths; Ahmedabad district, 19 cases, 6 deaths; Igatpuri, 40 cases, 38 deaths; elsewhere Nasik district, 12 cases, 6 deaths; Sholapur city, 7 cases, 6 deaths; elsewhere Sholapur district, 2 cases, 2 deaths; Baroda districts, 6 cases, 4 deaths; Kolhapur districts, 4 cases, 3 deaths; Palanpur districts, 46 cases, 37 deaths; Cutch districts, 129 cases, 106 deaths; Europeans, 2 cases, 1 death.

From VICEROY.

13th October 1897.

One imported case of plague has been reported from Madras, 7th October. Foreign Governments informed.

From SECRETARY OF STATE to GOVERNOR, BOMBAY.

15th October 1897.

Your telegram of 9th October. Remaining 6 doctors, including lady, left on Thursday for Bombay *viâ* Marseilles, also 10 nurses. Remainder will follow 20th October next. Names and description sent by mail. Please arrange for meeting them.

From GOVERNOR, BOMBAY.

17th October 1897.

If possible, please obtain services of Surgeon Major Reade from Military, for Plague duty, Bombay Presidency.

From GOVERNOR, BOMBAY.

17th October 1997.

In continuation of previous telegram about plague. Deaths from all causes in Bombay city for the week ending 15th October, 762. Reported plague deaths, 35. Poona city, suburbs and cantonments, 322 cases, 191 deaths ; Kirkee cantonment, 15 cases, 6 deaths ; Lanowli, 4 cases, 4 deaths ; remainder Poona district, 80 cases, 58 deaths ; Karad, 22 cases, 17 deaths ; elsewhere Satara district, 898 cases, 600 deaths ; Surat city, 91 cases, 42 deaths ; Surat district, 1 case, 1 death ; Thana district, 16 cases, 10 deaths ; Kolaba district, 12 cases, 9 deaths ; Ahmednagar district, 16 cases, 17 deaths ; Igatpuri, 22 cases, 14 deaths : elsewhere Nasik district, 12 cases, 8 deaths ; Sholapur city, 17 cases, 5 deaths ; Janjira State, 4 cases, 1 death ; Baroda districts, 13 cases, 6 deaths ; Kolhapur districts, no cases, 1 death ; Palanpur districts, 46 cases, 27 deaths ; Cutch districts, 132 cases, 105 deaths. Europeans, 1 case, no death.

From VICEROY.

18th October 1897.

In continuation of previous telegram of 13th October. One indigenous death from plague reported from Madras on 15th October.

From SECRETARY OF STATE to VICEROY.

21st October 1897.

In view of revival of plague in Western India, do you propose to revive or maintain nspection of railway and steamer passengers from plague districts ?

From VICEROY.

23rd October 1897.

Your telegram of 21st October. Main inspections at railway stations have been continuously maintained in view to preventing spread of plague from Bombay Presidency. Some subsidiary inspections had been abandoned, but special orders were issued on 14th October to Local Governments to maintain measures for inspection of railway passengers in their entirety. Rules for inspection passengers by steamers have been issued in accordance with provisions of Venice Convention by maritime Local Governments both at Bombay and at ports which are not infected.

From GOVERNOR, BOMBAY.

24th October 1897.

In continuation of previous telegrom about plague. Deaths from all causes in Bombay city for the week ending 22nd October, 792 ; reported plague deaths, 48. Poona city, suburbs and cantonments, 349 cases, 281 deaths ; Kirkee cantonment, 4 cases, 10 deaths ; Lanowli, 6 cases, 3 deaths ; remainder Poona district, 66 cases, 48 deaths ; Karad, 14 cases, 7 deaths ; elsewhere Satara district, 972 cases, 709 deaths ; Surat city, 64 cases, 54 deaths ; Surat district, 11 cases, 6 deaths ; Thana district, 14 cases, 14 deaths ; Kolaba district, 9 cases, 8 deaths ; Ahmednagar district, 49 cases, 28 deaths ; Igatpuri, 18 cases, 16 deaths ; elsewhere Nasik district, 23 cases, 20 deaths ; Sholapur city, 48 cases, 40 deaths ; Dharwar district, 3 cases, 2 deaths ; Janjira State, 13 cases, 9 deaths ; Baroda districts, 8 cases, 5 deaths ; Palanpur districts, 63 cases, 34 deaths ; Cutch districts, 106 cases, 82 deaths. Europeans, 1 case, no death.

From SECRETARY OF STATE to GOVERNOR, BOMBAY.

27th October 1897.

Your telegram of 17th October. Dr. Reade left for Bombay Friday, 22nd October.

From VICEROY.

28th October 1897.

In continuation of telegram 18th October. No case plague at Madras for 10 days. All persons segregated have been released.

From GOVERNOR, BOMBAY.

31st October 1897.

In continuation of previous telegrams about plague. Deaths from all causes Bombay city week ending 29th October, 746. Reported plague deaths, 44. Poona city, suburbs and cantonments, 510 cases, 364 deaths; Kirkee cantonment, 14 cases, 7 deaths; Lanowli, 3 cases, 5 deaths; remainder Poona district, 96 cases, 70 deaths; Karad, 9 cases, 9 deaths; elsewhere Satara district, 915 cases, 755 deaths; Surat city, 136 cases, 71 deaths; Surat district, 17 cases, 15 deaths; Thana district, 13 cases, 9 deaths; Kolaba district, 6 cases, 6 deaths; Ahmednagar district, 37 cases, 26 deaths; Igatpuri, 6 cases, 8 deaths; elsewhere Nasik district, 27 cases, 19 deaths; Sholapur city, 86 cases, 29 deaths; Dharwar district, two cases, no death; Belgaum district, 5 cases, 3 deaths; Janjira State, 5 cases, 4 deaths; Baroda districts, 9 cases, 8 deaths; Palanpur districts, 89 cases, 64 deaths; Cutch districts, 106 cases, 91 deaths. In Sind, 2 cases, no death.

From VICEROY.

4th November 1897.

Seventeen cases and one death from plague reported from Kotri in Sind, 107 miles from Karachi, between 8th October and 2nd November. Karachi still free. Foreign Governments have been informed.

From VICEROY.

6th November 1897.

In consequence of your telegram of the 18th February last, we issued Notification of the 20th February prohibiting pilgrimage to Mecca during last season. Question has arisen now whether prohibition should remain in force during current season. We have consulted Local Governments, and in view of opinions held as to probable feeling in certain parts of India, particularly, North-West Provinces and Oudh, where prohibition continues, we consider it impossible to continue absolute prohibition. Departure of pilgrims, even from plague-infected ports, is not prohibited by Venice Convention, which contains special permission for control of pilgrimage from such parts. We do not, however, propose to permit pilgrims to start from the port of Bombay, or to allow pilgrims from any part of Bombay Presidency, other than Sind, to go on pilgrimage at all; and we shall arrange for proper segregation of all pilgrims before they arrive at ports from which they can depart. We are at present considering what those ports shall be. We understand Turkey will impose fifteen days quarantine at Camaran on pilgrims from India, and propose, when we issue Notification declaring pilgrimage open from certain ports, to make public announcement of difficulties pilgrims are likely to encounter and to discourage them from going on pilgrimage.

From GOVERNOR, BOMBAY.

7th November 1897.

It may be necessary request you send more doctors, plague duty, this only intended as warning.

From GOVERNOR, Bombay.

8th November 1897.

In continuation of previous telegram about plague. Deaths from all causes in Bombay city for the week ended 5th November, 703 ; reported plague deaths, 41. Poona city, suburbs and cantonments, 651 cases, 460 deaths ; Kirkee cantonment, 22 cases, 19 deaths ; Lanowli, 2 cases, 2 deaths ; remainder Poona district, 183 cases, 131 deaths ; Karad, 5 cases, 5 deaths ; elsewhere Satara district, 1,191 cases, 926 deaths ; Surat city, 120 cases, 71 deaths ; Surat district, 52 cases, 26 deaths ; Thana district, 5 cases, 7 deaths ; Kolaba district, 12 cases, 9 deaths ; Ahmednagar district, 17 cases, 14 deaths ; Belgaum district, 12 cases, 10 deaths ; Nasik district, 18 cases, 19 deaths ; Sholapur city, 146 cases, 117 deaths ; Janjira State, 5 cases, 2 deaths ; Baroda districts, 2 cases, 2 deaths ; Palanpur districts, 58 cases, 34 deaths ; Kolhapur district, 1 case, no death ; Cutch district, 103 cases, 79 deaths ; in Sind, 17 cases, 11 deaths. Europeans, 2 cases, no death.

From VICEROY.

9th November 1897.

Spread of plague, Bombay, and fresh outbreak in Sind render additional supply of medical officers urgently required. Should plague attack Calcutta, number more medical officers would be immediately required, and are not available. Therefore please engage and send out at once 25 private practitioners on such terms that their services can be readily dispensed with.

From SECRETARY OF STATE to VICEROY.

13th November 1897.

Pilgrimage. Your telegram of 6th November. Proposals sanctioned. Do you consider embarkation from Sind still permissible ?

From GOVERNOR, Bombay.

14th November 1897.

In continuation of previous telegram about plague. Deaths from all causes, Bombay city, week ended 12th November, 699 ; reported plague deaths, 60. Poona city, suburbs and cantonment, 522 cases, 393 deaths ; Kirkee cantonment, 4 cases 4 deaths ; Lanowli, 2 cases, no death ; remainder Poona district, 118 cases, 73 deaths ; Karad, 6 cases, 4 deaths ; elsewhere Satara district, 895 cases, 761 deaths ; Surat city, 292 cases, 135 deaths ; Surat district, 12 cases, 15 deaths ; Thana district, 5 cases, 3 deaths ; Kolaba district, 7 cases, 3 deaths ; Ahmednagar district, 39 cases, 28 deaths ; Belgaum district, 17 cases, 14 deaths ; Nasik district, 47 cases, 35 deaths ; Sholapur city, 129 cases, 107 deaths ; elsewhere Sholapur district, 1 case, no death ; Janjira State, 4 cases, 3 deaths ; Baroda districts, 1 case no death ; Palanpur districts, 25 cases, 23 deaths ; Cutch districts, 99 cases, 75 deaths ; in Sind, 19 cases, 16 deaths ; Europeans, 4 cases, no deaths ; apparent increase in Surat city is due to better registration, as total mortality from all causes has fallen from 393 to 340.

From SECRETARY OF STATE to VICEROY.

15th November 1897.

I hope to despatch next week's Brindisi mail most of 25 temporary doctors asked for. Do you require women doctors ? If so, how many in addition to 25 men ?

From GOVERNOR, Bombay.

16th November 1897.

Please engage and send out 12 more nurses for plague duty.

From SECRETARY OF STATE to VICEROY.

17th November 1897.

Your telegram of 9th November. 20 temporary doctors start for Brindisi this week. 5 more follow next week. Papers and particulars go this mail to Government of Bombay. Doctors are instructed to report themselves to Surgeon-General, Bombay. Please inform Bombay, and telegraph reply about women doctors.

From VICEROY.

18th November 1897.

Your telegram about pilgrimage. We adhere to proposal to allow departure from Sind, since Venice Convention does not prohibit departures even from plague-infected port. Karachi is not infected, and only outbreak in Sind is at Kotri, where it seems under control. Outlet at Karachi is essential for pilgrims from northern India. We propose to issue notification in Saturday's Gazette.

From SECRETARY OF STATE to VICEROY.

18th November 1897.

Pilgrimage. Your telegram of 18th November. I agree.

From GOVERNOR, BOMBAY.

21st November 1897.

In continuation of previous telegram about plague. Deaths from all causes in Bombay city during week ended 19th November, 691; reported plague deaths, 45. Poona city, suburbs and cantonments, 611 cases, 436 deaths; Kirkee cantonment, 4 cases, 3 deaths; remainder Poona district, 141 cases, 126 deaths; Karad, 5 cases, 2 deaths; elsewhere Satara district, 1,142 cases, 957 deaths; Surat city, 210 cases, 150 deaths; Surat district, 14 cases, 11 deaths; Thana district, 12 cases, 12 deaths; Kolaba district, 6 cases, 5 deaths; Ahmednagar district, 36 cases, 20 deaths; Belgaum district, 55 cases, 39 deaths; Nasik district, 97 cases, 57 deaths; Sholapur city, 200 cases, 164 deaths; Akalkot State, 6 cases, 2 deaths; Baroda districts, 6 cases, 4 deaths; Palanpur districts, 16 cases, 5 deaths; Cutch districts, 54 cases, 55 deaths; in Sind, 7 cases, 4 deaths; Europeans, 3 cases, no deaths.

From SECRETARY OF STATE to VICEROY.

26th November 1897.

Your telegram of 9th November. Remaining plague doctors leave Brindisi, 28th; also 11 nurses. Twelfth will follow by next mail. They should be met on arrival. Please repeat this telegram to Bombay. Despatch follows.

From GOVERNOR, BOMBAY.

29th November 1897.

In continuation of previous telegram about plague. Deaths from all causes in Bombay city for the week ending 26th November, 707; reported plague deaths, 79. Poona city, suburbs and cantonments, 525 cases, 433 deaths; Kirkee cantonment, 4 cases, 3 deaths; Lanowli, 2 cases, 1 death; remainder Poona district, 89 cases, 62 deaths; Karad, 4 cases, 5 deaths; elsewhere Satara district, 945 cases, 731 deaths (which includes 82 cases, and 44 deaths of previous week, not recorded in last telegram); Surat city, 143 cases, 113 deaths; Surat district, 21 cases, 17 deaths; Thana district, 5 cases, 3 deaths; Kolaba district, 19 cases, 15 deaths; Ahmednagar district, 57 cases, 26 deaths; Belgaum district, 81 cases, 49 deaths; Hubli, Dharwar district, 1 case, 1 death; Nasik district, 60 cases, 60 deaths; Bankot, Ratnagiri district, 1 case, 1 death; Sholapur city, 327 cases, 269 deaths; Janjira State, 3 cases, 1 death; Akalkot State, 1 case, 3 deaths; Baroda districts, 9 cases, 8 deaths; Palanpur districts, 30 cases, 21 deaths; Cutch districts, 68 cases, 50 deaths; Kolhapur districts, 42 cases, 17 deaths; in Sind, 15 cases, 10 deaths; Europeans, no case, 1 death; of the Belgaum district, 13 cases and 7 deaths were of earlier date but not previously recorded.

From SECRETARY OF STATE to VICEROY.

3rd December 1897.

Your Home Despatch of 4th November, paragraph 5. Were Bombay rules restricting free egress from plague-stricken localities withdrawn, or maintained with modifications? I gather that cordons isolating plague-stricken places where practicable have proved effective in preventing spread of disease. Bombay rules, though open to criticism on details, applied the same principle to larger infected areas.

From SECRETARY OF STATE to VICEROY.

6th December 1897.

Your Home Despatch of 4th November, paragraph 9. Has plague spread to other villages? If so, to what extent?

From VICEROY.

7th December 1897.

Your telegram of 6th December. Plague in the Punjab has not spread beyond Khatkar Kalan and two neighbouring villages. In Khatkar Kalan only one case occurred since 18th November. In second village no case since 30th November. In third village outbreak is more recent. Eighteen cases in all reported first half of November, 68 cases second half, 38 cases in December up to 6th. All three villages have been evacuated, and the inhabitants are segregated in camps.

From SECRETARY OF STATE to VICEROY.

8th December, 1897.

Weekly telegrams regarding plague in Bombay Presidency reach me every Monday or Tuesday. Please telegraph every Monday information about plague outside Bombay Presidency. Each telegram, after noticing provinces whence plague is reported, should state that no plague is reported elsewhere.

From GOVERNOR, BOMBAY.

8th December 1897.

In continuation of previous telegram. Deaths from all causes in Bombay city during week ending 3rd December, 702; reported plague deaths, 78. Poona city, suburbs and cantonments, 496 cases, 394 deaths; Kirkee cantonment, 1 case, no death; remainder Poona district, 116 cases, 101 deaths; Karad, no cases, 2 deaths; elsewhere Satara district, 783 cases, 620 deaths (which includes 29 cases and 25 deaths of previous week not recorded in last telegram); Surat city, 91 cases, 58 deaths; Surat district, 18 cases, 15 deaths; Thana district, 8 cases, 5 deaths; Kolaba district, 4 cases, 6 deaths; Ahmednagar district, 15 cases, 23 deaths; Belgaum district, 62 cases, 48 deaths; Hubli Dharwar districts, 2 cases, no death; Nasik districts, 51 cases, 38 deaths; Bankot, Ratnagiri district, 1 case, no death; Sholapur city, 473 cases, 355 deaths; Janjira State, 1 case, 1 death; Akalkot State, 9 cases, 6 deaths; Baroda districts, 9 cases, 7 deaths; Palanpur districts, 33 cases, 16 deaths; Cutch districts, 41 cases, 43 deaths; Kolhapur districts, 5 cases, no death; in Sind, 16 cases, 10 deaths; Europeans, 1 case, no death.

From VICEROY.

13th December 1897.

Your telegram of 8th December. Following plague seizures and deaths reported from places outside Bombay Presidency during week ended 12th December :—In the Punjab, Khatkar Kalan, 1 death; Khankhanam, 41 cases, 30 deaths. No plague reported elsewhere.

From GOVERNOR, BOMBAY.

14th December, 1897.

In continuation of previous telegrams about plague. Deaths from all causes in Bombay city for week ending 10th December, 717; reported plague deaths, 71. Poona city, suburbs and cantonments, 520 cases, 383 deaths; Kirkee cantonment, 2 cases, 3 deaths; remainder Poona district, 85 cases, 62 deaths; Karad, 3 cases, 1 death; elsewhere Satara district, 571 cases, 439 deaths; Surat city, 133 cases, 93 deaths; Surat district, 28 cases, 20 deaths; Thana district, 11 cases, 11 deaths; Kolaba district, 7 cases, 5 deaths; Khandesh district, 7 cases, 4 deaths; Ahmednagar district, 57 cases, 43 deaths (which includes 30 cases and 23 deaths of previous week not recorded in last telegram); Belgaum district, 103 cases, 90 deaths; Nasik district, 50 cases, 44 deaths; Hubli, Dharwar district, 24 cases, 22 deaths; elsewhere Dharwar district, 4 cases, 3 deaths; Bankot, Ratnagiri district, 1 case, 2 deaths; elsewhere Ratnagiri district, 1 case, no death; Sholapur city, 520 cases, 448 deaths; Janjira State, 3 cases, no deaths; Akalkot State, 12 cases, 8 deaths; Baroda districts, 5 cases, 3 deaths; Palanpur districts, 12 cases, 10 deaths; Cutch districts, 52 cases, 33 deaths; in Sind, 7 cases, 5 deaths; Europeans, 1 case, no death. The cases and deaths in Hubli and elsewhere in Dharwar district occurred in previous weeks.

From VICEROY.

16th December 1897.

Your telegram of 3rd December. Bombay rules restricting egress from infected localities are still in force, but Government of Bombay are considering modification of rules according to our orders of 26th October, and matter has been under consideration of Plague Commission as to efficacy of cordons employed for the prevention of egress from infected places in Bombay Presidency. Our information is that it is only in small places, where it has been possible to remove population from infected habitations and place them in health camp, that cordon, with object of keeping inhabitants under healthy conditions and under medical supervision, has been found effective. Measures taken to prevent inmates of larger areas of infection from leaving them not only have failed to check plague, but have strong tendency to increase virulence of disease by intensifying local conditions favouring its development. Experienced officer in charge of operations at Kotri states that recent experience there shows it is impossible to prevent spread of disease in town from which all egress of population is prohibited, and that compulsory putting out of inhabitants is the only remedy. We understand that Plague Commission hold that present system of passes, when applied early, undoubtedly tends to ultimate spread of disease in locality by preventing voluntary evacuation. They believe that incidence of disease in Sholapur was intensified in this manner. They consider that essential measure is removal of inmates from infected localities. We entirely share these views, and deprecate the adoption of any general system for prohibiting the egress of inhabitants from areas within which outbreak occurs. Our opinion is that the proper course is that recommended to Government of Bombay by present Plague Commission, namely, removal from infected quarters of town or from infected village to segregation camp of all persons who have been exposed to risk of infection, healthy population being encouraged to leave infected area before disease becomes thoroughly diffused through it.

From GOVERNOR, BOMBAY.

19th December 1897.

In continuation of previous telegram about plague. Deaths from all causes in Bombay city for the week ending 17th December, 818; reported plague deaths, 137. Poona city, suburbs and cantonments, 408 cases, 350 deaths; Kirkee cantonment, 2 cases, no deaths; remainder Poona district, 74 cases, 67 deaths; Surat city, 88 cases, 63 deaths; Surat district, 48 cases, 22 deaths; Satara district, 483 cases, 382 deaths (which includes 14 cases and 8 deaths of previous weeks not previously reported); Thana district, 15 cases, 8 deaths; Kolaba district, 4 cases, 3 deaths; Belgaum district, 62 cases, 48 deaths; Nasik district, 96 cases, 71 deaths (which includes 8 cases and 7 deaths, of previous week not previously reported); Ahmednagar district, 103 cases, 71 deaths (which includes 16 cases and 13 deaths of previous weeks not previously reported); Khandesh district, 31 cases, 24 deaths; Hubli, 3 cases, 4 deaths; Sholapur city, 354 cases, 270 deaths; elsewhere Sholapur district, 8 cases, 8 deaths; Janjira State, 3 cases, 2 deaths; Akalkot State, 16 cases, 12 deaths; Baroda districts, 10 cases, 9 deaths; Palanpur districts, 71 cases, 42 deaths; Cutch districts, 26 cases, 25 deaths; Kolhapur districts, 35 cases, 29 deaths; in Sind, 3 cases, 2 deaths; Europeans, 2 cases, no deaths.

From VICEROY.

20th December 1897.

In continuation of our telegram of 13th December. Following plague seizures and deaths reported from places outside Bombay Presidency during week ending 19th December:—In the Punjab, Jhander Khurd, 2 cases, 1 death; Khankhanan, 10 cases, 11 deaths; Birampur, in district Hoshiarpur, between 11th and 18th December, 17 cases, 12 deaths. Birampur is near the other infected villages; the inhabitants have been segregated in camp. No plague reported elsewhere.

From VICEROY.

27th December, 1897.

In continuation of my telegram of 20th December. Following plague seizures and deaths reported from places outside Bombay Presidency during week ending 26th December:—In the Punjab, Jhander Khurd, no cases, 1 death; Khankhanan, 6 cases, 5 deaths; Birampur, 6 cases, 5 deaths. In North-West Provinces and Oudh, Kankhal, 3 cases, which occurred between 8th and 13th December, and 1 case reported on 24th December. No plague reported elsewhere.

From GOVERNOR, Bombay.

29th December, 1897.

In continuation of previous telegram about plague. Deaths from all causes in Bombay city for the week ending 24th December, 888; reported plague deaths, 172. Poona city, suburbs and cantonments, 285 cases, 250 deaths; Kirkee cantonment, 1 case, no death; remainder Poona district, 73 cases, 55 deaths; Surat city, 59 cases, 55 deaths; Surat district, 35 cases, 33 deaths; Satara district, 346 cases, 271 deaths; Thana district, 21 cases, 15 deaths; Kolaba district, 12 cases, 11 deaths; Belgaum district, 71 cases, 54 deaths; Nasik district, 93 cases, 70 deaths; Khandesh district, 16 cases, 17 deaths; Ahmednagar district, 65 cases, 51 deaths; Hubli, 2 cases, 1 death; Sholapur city, 180 cases, 197 deaths; Ratnagiri district, no cases, 1 death; Janjira State, 10 cases, 5 deaths; Akalkot State, 12 cases, 10 deaths; Baroda districts, 39 cases, 24 deaths (which includes 3 cases and 3 deaths of previous weeks not previously reported); Palanpur district, 112 cases, 91 deaths; Cutch districts, 26 cases, 15 deaths; Kolhapur districts, 34 cases, 25 deaths; in Sind, 3 cases, 3 deaths; Europeans, 1 case, no death.

From VICEROY.

3rd January, 1898.

In continuation of previous telegram of 27th December. Following plague seizures and deaths reported from places outside Bombay Presidency :—Punjab—Khankhanan, 1 case, 1 death ; Birampur, 5 cases, 3 deaths ; Khatkar Khurd, near other infected villages, 6 cases, 2 deaths ; Rajputana—Kalinderi, Sirohi State, 4 cases, 4 deaths, between 16th and 24th December. North-West Provinces, 1 fatal suspected case reported from village near Kankhal on 31st December. No plague reported elsewhere.

From GOVERNOR, BOMBAY.

4th January, 1898.

In continuation of previous telegram about plague. Deaths from all causes in Bombay city for week ending 31st December, 1,001 ; reported plague deaths, 225. Poona city, suburbs and cantonments, 190 cases, 167 deaths ; Kirkee cantonment, 5 cases, 2 deaths ; remainder Poona district, 62 cases, 49 deaths ; Surat city, 81 cases, 49 deaths ; Surat district, 55 cases, 36 deaths ; Satara city, 95 cases, 80 deaths ; Satara district, 261 cases, 208 deaths ; Thana district, 9 cases, 9 deaths ; Kolaba district, 12 cases, 11 deaths ; Belgaum district, 66 cases, 60 deaths ; Nasik district, 92 cases, 66 deaths ; Khandesh district, 8 cases, 7 deaths ; Ahmednagar district, 29 cases, 27 deaths ; Sholapur city, 65 cases, 55 deaths ; Sholapur district, 13 cases, 11 deaths ; Janjira State, 6 cases, no deaths ; Akalkot State, 6 cases, 8 deaths ; Baroda districts, 45 cases, 28 deaths ; Palanpur districts, 45 cases, 30 deaths ; Cutch districts, 25 cases, 26 deaths ; in Sind, 3 cases, 1 death.

From GOVERNOR, BOMBAY.

8th January, 1898.

This is to give warning that it is possible that we may require some more doctors for plague work.

From GOVERNOR, BOMBAY.

9th January, 1898.

In continuation of previous telegrams about plague. Deaths from all causes in Bombay city, for week ending 7th January last, 1,118 ; reported plague deaths, 357. Poona city, suburbs and cantonments, 142 cases, 111 deaths ; Poona district, 47 cases, 37 deaths ; Satara city, 80 cases, 75 deaths ; Satara district, 135 cases, 105 deaths ; Surat city, 75 cases, 56 deaths ; Surat district, 48 cases, 37 deaths ; Thana district, 14 cases, 11 deaths ; Nasik district, 116 cases, 99 deaths ; Sholapur city, 39 cases, 31 deaths ; Sholapur district, 73 cases, 72 deaths ; Ahmednagar district, 51 cases, 40 deaths ; Khandesh district, 13 cases, 12 deaths ; Kolaba district, 4 cases, 5 deaths ; Belgaum district, 88 cases, 77 deaths ; Bankot, 1 case, 1 death ; Janjira State, 5 cases, 3 deaths ; Akalkot State, 1 case, 1 death ; Bhor State, 7 cases, 2 deaths ; Aundh State, 51 cases, 38 deaths ; Baroda districts, 69 cases, 41 deaths ; Palanpur districts, 53 cases, 36 deaths ; Kolhapur districts, 18 cases, 15 deaths ; Cutch districts, 46 cases, 41 deaths ; in Sind, 1 case, 3 deaths.

From VICEROY.

10th January 1898.

In continuation of previous telegram of 3rd January. Following plague seizures and deaths reported from places outside Bombay Presidency :—In the Punjab, Khankhanan, 3 cases, 1 death ; Jhander Khurd, no cases, 2 deaths ; Khatkar Khurd, 3 cases, 3 deaths ; Birampur, 4 cases, 3 deaths ; North-West Provinces, Jaggatapur near Khankhal, 11 cases, 6 deaths ; Ranimazra near Kankhal, 1 suspicious case ; Rajputana, 8 cases, and 3 deaths reported up to 5th January from villages in Sirohi State. No plague reported elsewhere.

From VICEROY.

15th January 1898.

Your telegram of 15th November. Please engage and send out 2 lady doctors, 25 lady nurses, and 8 medical practitioners, to report themselves to Government of Bombay, to whom instructions will be sent. This will meet present requirements of Local Government. Should plague extend, more men and women doctors and nurses will be required at once.

From VICEROY.

17th January 1898.

In continuation of our telegram of 10th January. Following plague seizures and deaths reported from places outside Bombay Presidency:—In the Punjab, Jullunder district, Khatkar Khurd, 1 case, 1 death; Khankhanam, 7 cases 3 deaths; Hoshiarpur district, Birampur, 2 cases, 3 deaths. North-West Provinces, Saharanpur district, Jawalapur, 1 case; Jajatput, 2 cases, 1 death reported on 9th January. Rajputana, Sirohi State, 6 cases, 4 deaths; Thudial, 9 cases, 8 deaths; Kalinderi, 2 cases, 2 deaths; Abu road, 1 death. No plague reported elsewhere.

From GOVERNOR, BOMBAY.

19th January 1898.

In continuation of our previous telegram about plague. Deaths from all causes in Bombay city for week ended 14th January, 1,423; reported plague deaths, 557. Poona city, suburbs and cantonments, 113 cases, 112 deaths; Poona district, 22 cases, 17 deaths; Surat city, 90 cases, 69 deaths; Surat district, 56 cases, 49 deaths; Satara city, 89 cases, 79 deaths; Satara district, 211 cases, 167 deaths (which includes 36 cases, and 17 deaths of previous weeks not previously reported); Thana district, 21 cases, 16 deaths; Colaba district, 12 cases, 9 deaths; Belgaum district, 91 cases, 76 deaths; Nasik district, 130 cases, 114 deaths; Khandesh district, 12 cases, 12 deaths; Ahmednagar district, 54 cases, 52 deaths (which include 12 cases and 12 deaths of previous week not previously reported); Hubli town, 2 cases, 2 deaths; Sholapur city, 15 cases, 20 deaths; Sholapur district, 15 cases, 13 deaths; Bhor State, 3 cases no deaths; Akalkot State, no cases, 1 death; Aundh State, 21 cases, 18 deaths; Baroda districts, 67 cases 54 deaths; Palanpur districts, 56 cases, 46 deaths; Cutch districts, 78 cases, 46 deaths (which includes 11 cases and 6 deaths of previous weeks not previously reported); Kolhapur districts, 44 cases, 29 deaths; in Sind, 2 cases, 1 death.

From GOVERNOR, BOMBAY.

23rd January 1898.

In continuation of previous telegram about plague. Deaths from all causes in Bombay city for week ending 21st January, 1706; reported plague deaths, 761; Poona city, suburbs and cantonments, 94 cases, 77 deaths; Poona district, 44 cases, 37 deaths; Satara city, 86 cases, 71 deaths; Satara district, 141 cases, 114 deaths: Surat city, 60 cases, 50 deaths; Surat district, 88 cases, 81 deaths; Sholapur city, 6 cases, 10 deaths; Sholapur district, 77 cases, 65 deaths; Thana district, 31 cases, 22 deaths; Nasik district, 91 cases, 74 deaths; Ahmednagar district, 42 cases, 37 deaths (which includes seven cases and seven deaths of previous weeks not previously reported); Khandesh district, 12 cases, 10 deaths; Kolaba district, 22 cases, 11 deaths; Belgaum district, 92 cases, 89 deaths; Bankot, 1 case, 1 death; Janjiri State, 3 cases, no deaths; Aundh State, 14 cases, 6 deaths; Baroda districts, 143 cases, 106 deaths; Palanpur districts, 29 cases, 17 deaths; Kolhapur districts, 44 cases, 24 deaths; Cutch districts, 67 cases, 61 deaths; in Sind, 1 case, no death; Europeans, 1 case, 1 death.

From VICEROY.

24th January 1898.

In continuation of our telegram of 17th January. Following plague seizures and deaths reported from places outside Bombay Presidency:—In the Punjab, Jullunder district, Khankhanan, 2 cases, 1 death; Hoshiarpur district, Birampur, 3 cases, 2 deaths. North-West Provinces, Saharanpur district, Jawalapur, 2 cases, 1 death; Jaggitpur, seven cases between 9th and 23rd January; Bahadarpur, one case; Rajputana, Sirohi State, Tewri, 16 cases, 12 deaths; Shudial, 5 cases, 6 deaths; Kalinderi, 12 cases, 5 deaths between 15th and 23rd January; Abu Road, 2 imported cases; Erinpura Road, 1 imported case, 1 death; Jodhpur State, Marwar Junction, one fatal case reported on 18th January in segregation camp; Hyderabad State, Naldrug district, an outbreak practically confined to one locality reported to have occurred and being stamped out; last case on 16th January. No plague reported elsewhere.

From SECRETARY OF STATE to VICEROY.

26th January 1898.

Your telegram of 15th January. 8 men, 2 women doctors, and 25 nurses left to-day for Bombay, *viâ* Marseilles. Nurses should be met. I advise immunising all, with their consent, by Haffkine's process. Please repeat to Bombay. Papers follow.

From GOVERNOR, BOMBAY.

30th January 1898.

In continuation of previous telegram about plague. Deaths from all causes in Bombay city for the week ending 28th January, 1,726; reported plague deaths, 840; Poona city, suburbs and cantonments, 67 cases, 55 deaths; Poona district, 21 cases, 17 deaths; Satara city, 83 cases, 73 deaths; Satara district, 144 cases, 136 deaths; Surat city, 46 cases, 37 deaths; Surat district, 79 cases, 65 deaths; Sholapur district, 205 cases, 145 deaths; Thana district, 24 cases, 15 deaths; Nasik district, 60 cases, 48 deaths; Ahmednagar district, 31 cases, 30 deaths (which includes 18 cases and 13 deaths not previously reported); Khandesh district, 12 cases, 12 deaths; Kolaba district, 29 cases, 20 deaths; Belgaum district, 63 cases, 53 deaths; Bankot, 2 cases, 1 death; Janjiri State, no case, 2 deaths; Bhor State, 2 cases, 2 deaths; Aundh State, 6 cases, 8 deaths; Baroda city, 96 cases, 81 deaths; Baroda districts, 53 cases, 36 deaths; Palanpur districts, 63 cases, 33 deaths; Kolhapur distrits, 66 cases, 37 deaths; Cutch districts, 44 cases, 38 deaths; in Sind, 1 case, 1 death; Europeans, 1 case, no death. The Sholapur district figures include several cases not reported during past week.

From VICEROY.

31st January 1898.

In continuation of previous telegram of 24th January. Following plague seizures and deaths reported from places outside Bombay Presidency: —North-West Provinces and Oudh—Saharanpur district, Jawalapur, one case; Jaggitpur, 1 case, 1 death. In the Punjab—Hoshiarpur district, Birampur, 4 cases, 1 death; Jullunder district, Khankhanan, 2 cases, 1 death. Rajputana—Sirohi State, Kalinderi, 13 cases, 12 deaths; Shudial, 5 cases, 1 death; Tewri, 4 cases, 4 deaths; Wardra, 2 cases, 3 deaths. Full particulars now received about outbreak in Naldrug district, Hyderabad State, up to 18th January:—Kashigaon, 21 cases, 17 deaths; Dhotri, 55 cases, 48 deaths; Warlingaon, 21 cases, 14 deaths; Saraedi, 3 cases, 2 deaths; Itkal and neighbouring villages, 13 cases. Telegram 29th January reports 13 cases, 4 deaths, in Raviamba Ajagn, and cases also reported from village Gangoti of same district, but number of cases there not yet ascertained. Gulburga district, Shahabad, 3 cases; Wadi, 4 cases; Tumbalwadi, 8 cases; Gulburga, 4 cases. Most of cases in Gulburga district imported. No plague reported elsewhere.

From GOVERNOR, BOMBAY.

6th February 1898.

In continuation of previous telegram about plague. Deaths from all causes, Bombay city, week ending 4th February, 1,999; reported plague deaths, 1,004. Poona city, suburbs, and cantonments 48 cases, 30 deaths; Poona district, 15 cases, 14 deaths; Satara city, 38 cases, 33 deaths; Satara district, 111 cases, 87 deaths (which includes 10 cases and 6 deaths of previous weeks not previously reported); Surat city, 69 cases, 59 deaths; Surat district, 87 cases, 73 deaths; Sholapur district, 135 cases, 95 deaths; Thana district, 35 cases, 25 deaths; Nasik district, 39 cases, 36 deaths; Ahmednagar district, 47 cases, 39 deaths (which includes 30 cases and 27 deaths of previous weeks not previously reported); Khandesh district, 20 cases, 13 deaths; Kolaba district, 21 cases, 20 deaths.; Belgaum district, 65 cases, 54 deaths; Hubli, 1 case, 1 death; Bankot, 1 case, 2 deaths; Aundh State, 5 cases, 3 deaths; Baroda city, 135 cases, 106 deaths; Baroda district, 49 cases, 49 deaths (which includes 20 cases and 13 deaths of previous weeks not previously reported); Palanpur districts, 53 cases, 35 deaths; Kolhapur district, 67 cases, 64 deaths; Cutch districts, 26 cases, 19 deaths; in Sind, 3 cases, 1 death. Europeans, 4 cases, no deaths.

From VICEROY.

7th February 1898.

In continuation of our telegram of 31st January. Following plague seizures and deaths reported from places outside Bombay Presidency. North-West Provinces and Oudh:—Saharanpur district, some fatal cases have been reported from Jawalapur. In the Punjab:—Jullunder district, Shakohpur (small Jat village about 500 inhabitants, 4 miles to the south of Khankhanan), 35 cases, 6 deaths; Sirhal Gazian (4 miles west of Khankhanan), 14 cases, 4 deaths; Hoshiarpur district, Birampur, 5 cases, 1 death; Parkohwal (small Gugar village of 160 houses, 1 mile from Birampur), 10 cases, 6 deaths. Rajputana:—Sirohi State, Kalinderi, 10 cases, 10 deaths; Shudial, 2 cases, 4 deaths; 1 fatal suspected case in Pindwara segregation camp on 28th January; Jodhpur State, Bilora, 1 fatal suspected case on 2nd February. Central Provinces:—Phuskee (Chanda district), 7 suspected cases, 5 deaths reported to have occurred within last 2 months. Hyderabad State, Naldrug district, following cases reported up to 5th February in addition to those previously reported:—Kashegaon, 1 case, 6 deaths; Karamba, 36 cases, 26 deaths; Nanuz, 12 cases, 11 deaths; Kirki, 2 cases, 14 deaths; Sarali, 6 cases, 1 death; Warligaon, 4 cases; Dhotri, 13 cases. Resident at Hyderabad telegraphed on 3rd February:—"Plague exists in most villages near Sholapur frontier; well organised and extensive preventive measures have been introduced."

From GOVERNOR, BOMBAY.

13th February 1898.

In continuation of previous telegram about plague. Deaths from all causes in Bombay city for week ending 11th February, 2,140; reported plague deaths, 1,220. Poona city, suburbs and cantonments, 43 cases, 37 deaths; Poona district, 14 cases, 14 deaths; Satara city, 31 cases, 29 deaths; Satara district, 89 cases, 81 deaths; Surat city, 70 cases, 47 deaths; Surat district, 120 cases, 89 deaths; Sholapur district, 168 cases, 160 deaths (which includes 15 cases and 15 deaths of previous weeks not reported in last telegram); Thana district, 32 cases, 25 deaths; Nasik district, 61 cases, 44 deaths; Ahmednagar district, 39 cases, 29 deaths; Khandesh district, 18 cases, 14 deaths; Kolaba district, 34 cases, 28 deaths; Belgaum district, 40 cases, 33 deaths; Hubli, 2 cases, 2 deaths; Bankot, 1 case, 1 death; elsewhere, Ratnagiri district, 2 cases, 2 deaths; Aundh State, 21 cases, 13 deaths; Bhor State, 1 case, 1 death; Baroda city, 138 cases, 101 deaths; Baroda districts, 50 cases, 29 deaths; Palanpur districts, 32 cases, 23 deaths; Kolhapur districts, 57 cases, 46 deaths; Cutch districts, 25 cases, 18 deaths. Europeans, 1 case, no deaths.

From VICEROY.

14th February 1898.

In continuation of our telegram of 7th February. Following plague seizures and deaths reported from places outside Bombay Presidency:—North-West Provinces and Oudh,—Saharanpur district, Jawalapur, 10 cases, 8 deaths, of which 4 cases, 3 deaths suspicious (these figures include the cases reported in my last telegram); Jaggitanur, 1 case; Agra district, 1 imported suspicious case. In the Punjab,—Jullundur district, Shikohpur, 26 cases, 26 deaths; Serhal Gazian, 11 cases, 14 deaths; Malhipota, 8 cases; Hoshiarpur district, Birampur, 2 cases, 2 deaths; Parkhowal, 6 cases, 2 deaths; Simmal Majza, 6 cases, 1 death; Rampur Bilron (two miles from Birampur), 2 cases, 1 death; Rajputana,—Sirohi State, Kalinderi, 7 cases, 6 deaths; Hyderabad State, Naldrug district, Saroli, total 24 cases, 20 deaths, up to 4th February; Kashegaon, total 39 cases, 17 deaths, up to 4th February; Khodawadi, 1 case, 1 death; Jangoti, total deaths up to end of January 137, since then 16 deaths; Umerghi, total deaths up to end of January not less than 150, since then 8 deaths; Tarrore and Sirsa, each 6 deaths. Plague rumoured to exist at 2 places in Bidar district; special plague officer has gone to make investigation. No plague reported elsewhere.

From GOVERNOR, BOMBAY.

14th February 1898.

Doctor Bruce contracted plague, recovering. Full report will follow.

From GOVERNOR, BOMBAY.

15th February 1898.

I regret to report death from plague at Poona on 13th February of nurse Miss Florence Eva Morgan.

From VICEROY.

18th February 1898.

In continuation of our telegram of 15th January. Please send as soon as possible ten medical practitioners for temporary plague and general duty in Madras Presidency.

From GOVERNOR, BOMBAY.

20th February 1898.

In continuation of previous telegrams about plague. Deaths from all causes in Bombay city during week ending 18th February, 2,046; reported plague deaths, 1,136; Poona city, suburbs and cantonments, 22 cases, 21 deaths; Poona district, 28 cases, 25 deaths; Satara city, 29 cases, 27 deaths; Satara district, 73 cases, 57 deaths; Surat city, 65 cases, 51 deaths; Surat district, 81 cases, 59 deaths; Sholapur district, 77 cases, 55 deaths; Thana district, 24 cases, 16 deaths; Nasik district, 36 cases, 35 deaths; Ahmednagar district, 24 cases, 21 deaths; Khandesh district, 9 cases, 11 deaths; Kolaba district, 47 cases, 29 deaths; Belgaum district, 82 cases, 74 deaths; Ratnagiri district, 10 cases, 2 deaths; Aundh State, 9 cases, 11 deaths; Akalkot State, 3 cases, 3 deaths; Baroda city, 107, cases, 83 deaths; Baroda districts, 70 cases, 54 deaths; Palanpur districts, 23 cases, 23 deaths; Kolhapur districts, 101 cases, 80 deaths; Cutch districts, 7 cases, 8 deaths; Europeans, 1 case, 2 deaths. The Belgaum district figures include 47 cases and 44 deaths of previous week not previously reported.

From VICEROY.

21st February 1898.

In continuation of our telegram of 14th February. Following plague seizures and deaths reported from places outside Bombay Presidency. North-West Provinces and Oudh, Saharanpur district, 8 seizures, 6 deaths. In the Punjab:—Jullunder district, 66 seizures, 30 deaths; one new village attacked; Hoshiarpur district, 8 seizures, 3 deaths;

one new village attacked. Rajputana, Sirohi State, 7 seizures, 9 deaths. Hyderabad State, Naldrug district, 130 deaths reported from 16 villages, in addition to deaths communicated to you in our telegram of 14th February, and four cases in one other village. Plague said to exist in all villages within radius of 30 miles of Gangoti, and total 450 deaths reported to have occurred in them up to 17th February. Since evacuation of these villages few new cases reported. Gulburga district, 4 deaths. Resident at Hyderabad telegraphed on 17th February 220 imported cases of plague had occurred at Wadi, but plague not endemic there. We have telegraphed for explanation and details of the large number of imported cases. No plague reported elsewhere.

From SECRETARY OF STATE to GOVERNOR, BOMBAY.

21st February 1898.

Please telegraph state of health of following persons reported sick—Nurse MacDougall and another plague nurse.

From GOVERNOR, BOMBAY.

23rd February 1898.

Your telegram of 21st February. We regret to report that nurse Miss Harriet McDougall died of plague last night. Miss Dowson had fever on Saturday, but is better.

From SECRETARY OF STATE to VICEROY.

26th February 1898.

Your telegram of 18th February. Ten doctors started for Bombay. Thence they go to Madras by rail. They have been instructed to report themselves to Surgeon-General. Please inform Madras. Despatch follows.

From GOVERNOR, BOMBAY.

27th February 1898.

In continuation of previous telegram about plague. Deaths from all causes in Bombay city for the week ending 25th February, 2,059; reported plague deaths, 1,104. Poona city, suburbs, and cantonments, 11 cases, 13 deaths; Poona district, 15 cases, 7 deaths; Satara city, 19 cases, 18 deaths; Satara district, 118 cases, 89 deaths; Surat city, 77 cases, 58 deaths; Surat district, 165 cases, 120 deaths; Sholapur district, 99 cases, 66 deaths; Thana district, 36 cases, 30 deaths; Nasik district, 37 cases, 30 deaths; Ahmednagar district, 26 cases, 24 deaths; Khandesh district, 24 cases, 15 deaths; Kolaba district, 27 cases, 30 deaths; Belgaum district, 89 cases, 72 deaths; Ratnagiri district, 1 case, 4 deaths; Hubli, 1 case, 1 death; Aundh State, 12 cases, 7 deaths; Akalkot State, 26 cases, 15 deaths; Bhor State, 2 cases, 2 deaths; Baroda city, 189 cases, 151 deaths; Baroda districts, 110 cases, 78 deaths; Palanpur districts, 15 cases, 7 deaths; Kolhapur districts, 82 cases, 61 deaths; Cutch districts, 18 cases, 11 deaths. Europeans, 1 case, 1 death.

From VICEROY.

28th February 1898.

Following plague seizures and deaths reported from places outside Bombay Presidency since 21st February:—North-West Provinces, Saharanpur district, 14 seizures, 12 deaths; of which 10 seizures and 8 deaths in Jawalapur town. Punjab, Jullunder district, 108 seizures, 74 deaths; two new villages attacked: Hoshiarpur district, 18 seizures, 7 deaths; one new village attacked. Rajputâna, Sirohi State, 8 seizures, 5 deaths. Hyderabad State, Naldrug district, total of seizures has not been reported, 91 deaths: Gulburga district, 7 seizures, 7 deaths. No plague reported elsewhere.

From the GOVERNMENT OF INDIA to the SECRETARY OF STATE FOR INDIA.

(Sanitary No. 14).

Simla, the 28th April 1897.

MY LORD,

IN continuation of our Sanitary Despatch No. 13, dated the 14th instant, we have the honour to send your Lordship a further narrative of events connected with the plague.

2. In Bombay, the position of affairs continues to improve in a most satisfactory manner. It was stated in our Despatch of the 14th instant, that during the first twelve days in April the daily average number of seizures and deaths showed a marked decline to 60 and 55 respectively. During the week ending the 19th, there was a further fall to 47 and 45, and during the week ending the 26th to 34 and 29. During the first twelve days of April the daily average mortality from all causes was 142 ; during the week ending the 19th, 123 ; and during the week ending the 26th, 95. This last figure compares with a daily average of 86 for the corresponding period of the five preceding years.

The carefully organized system of house to house search ensures the detection of most of the cases, thus enabling the precautionary rules to be enforced, and the sufferers to be treated in the special plague hospitals of which over 30 have been established. To prevent the city from being re-infected, the Plague Committee have organized a thorough system of inspection of passengers coming by rail from Gujerat, the Deccan, and the suburban station, with corresponding arrangements for segregation and treatment. A similar inspection has been organized in the case of arrivals by sea.

3. In other parts of the Bombay Presidency proper, the returns from Poona and Palanpur show a steady decrease in the number of cases, whilst the position in Thana, Surat, and Kolaba remains serious and without marked change. The energetic work of the Plague Committee at Poona has materially contributed to the improvement in that place. A telegram from the Government of Bombay, No. 161-P., dated the 15th April, which is appended to this Despatch, gives information regarding the state of affairs in Palanpur. The plague cases are not confined to any particular quarter of the town. Four hospitals have been established, to each of which is attached a place for the segregation of infected persons. The number of cases reported from the Baroda State remains about the same. A serious outbreak has taken place in Cutch and a British medical officer is being sent there at the request of His Highness the Ráo.

4. The figures have fluctuated in Karachi, but on the whole, the downward tendency continues. During the first eleven days in April the average daily numbers of seizures and deaths were 28 and 22 respectively. During the week ending the 18th the figures were 27 and 17, and during the eight days ending the 26th, 22 and 15. In Sukkur there has been some diminution of the number of cases during the past few days, but as His Excellency the Governor of Bombay has already informed Your Lordship three-quarters of the population are said to have left the place. The disease has increased somewhat in Hyderabad in Sind, and a Plague Committee has been appointed with functions and powers similar to those of the Committees already appointed in Bombay, Poona, Karachi and Sukkur. Some indigenous cases continue to occur in the Karachi and Shikarpur districts, but the infection has not spread to any fresh places in Sind.

5. Outside the Bombay Presidency and Sind, the only cases that have been reported since those mentioned in our last Despatch, are two in Goa, one in Baluchistan, one at Kohala, reported by the Resident of Kashmir on the 26th instant, and six cases said to be plague at Hardwar. The Baluchistan case was detected at the Sibi inspection station, on the 12th instant. The sufferer, a Muhammadan from Sukkur, was kept under treatment for several days in the segregation hospital, and then died. The case discovered at Kohala was that of a Muhammadan who had travelled from Jhelum, but information has not yet been received as to how he became infected.

6. The Government of the North-Western Provinces and Oudh and the authorities in Sind made due preparations before the commencement of the Hardwar fair for the inspection of all intending pilgrims from Sind and the detention of all who were in any way suspicious or likely to carry infection. The circumstances of three suspicious cases which occurred at the fair are somewhat remarkable. An account of them is given in an

extract from a letter* dated Hardwar, the 9th instant, from Surgeon-Major Thomson, Sanitary Commissioner of the North-Western Provinces and Oudh, to our Sanitary Commissioner, a copy of which is among the enclosures of this Despatch. All three cases occurred amongst residents of Hardwar and no connection appears to have been established between them and the infected districts or persons coming from those districts. At the same time the symptoms in all three cases were strongly indicative of plague, and Dr. Thomson considers that they were probably genuine cases of plague. He took stringent sanitary precautions and the infection did not spread at the time. On the 15th instant the Government of the North-Western Provinces and Oudh reported that no information had been received of more cases and that the pilgrims had left for their homes. In a subsequent telegram, dated the 20th instant, the Government of the North-Western Provinces and Oudh reported that another fatal case of plague had occurred at Hardwar on the 18th. The sufferer had been residing in the town for some weeks. Since then two cases are said to have occurred, but no details have been received.

7. It has been necessary to adopt special measures with regard to another religious fair, known as the Singhast Mela, which is held once in twelve years at Ujjain, and is usually attended by three or four hundred thousand persons, chiefly religious mendicants, from all parts of India. The period of the fair on the present occasion is from the 17th instant to the 16th May, the dates being those of the full moon in the Hindu months of Chait and Baisakh. Arrangements were begun more than a year ago to provide for the great influx of people expected at Ujjain, but, in October last, when famine threatened, the Maharaja of Gwalior issued orders prohibiting the fair, and notices were printed by His Highness and forwarded to the Agent to the Governor General for wide circulation. Copies were furnished by the Agent in November last to all Local Governments and Administrations and to the authorities of all the railways in India, and a reminder was sent in March last. On the 10th instant, Colonel Barr reported that, notwithstanding these precautions, about fifteen thousand religious mendicants had arrived from all parts of India, and that it was impossible to prevent them from going to Ujjain, notwithstanding the anxiety felt lest an epidemic, possibly of plague, should break out amongst the pilgrims. He therefore arranged in consultation with the local authorities and with the consent of His Highness that the pilgrims should bathe on the 17th instant in the Sipra at Ujjain, under strict rules with regard to encampment outside the city and sanitary arrangements, and under a promise to leave Ujjain on the following day. The spiritual heads of the different sects agreed to these arrangements and bound themselves to enforce obedience on all their followers. Colonel Barr urged that, in view of the prevalence of plague in some of the districts whence the pilgrims come, it was most important to prevent a further assemblage during the period intervening between the first and second bathing days. With this view we fully agreed and on the 12th instant a telegram was sent to all Local Governments and Administrations repeating Colonel Barr's observations and stating that we desired that everything possible should be done to meet His Highness Maharaja Sindhia's desire to restrict the assemblage. We also issued and gave wide circulation to a notification under the Epidemic Diseases Act 1897 (copy enclosed), prohibiting, until the 18th May, the sale of railway tickets for Ujjain to all persons intending or believed to be intending to visit the Singhast Mela. On the 23rd instant Colonel Barr reported that the pilgrims who were permitted to bathe at Ujjain on the 17th instant had dispersed without any outbreak of disease having occurred among them. About twenty-two thousand devotees were present at the bathing, and the arrangements for sanitation and control were carried out without difficulty.

8. In paragraph 4 of our Despatch No. 12 (Sanitary), dated the 12th March last, it was mentioned that there had been a slight outbreak of the local form of plague, named "Mahamari" in the district of Garhwal. We are glad to be able to report that no further cases have occurred.

9. In paragraph 10 of the Despatch quoted above, it was stated that the Government of Bombay have been directed to cause all dirty and suspicious luggage to be disinfected at a railway station near the frontier of the Bombay Presidency and Sind on each of the railway lines leading from those Provinces to other parts of India. Further correspondence on this subject is appended to this Despatch.* In their telegram No. 1388-P., dated the 9th instant, the Government of Bombay represented that their medical advisers considered that considerable delay would be caused to the trains and urged the difficulty of adopting means to prevent evasion of the inspection and disinfection. In the telegram from our Home Department No. 1302, dated the 15th instant, we

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* Not reprinted.

suggested that as it would probably not be possible to make prompt arrangements for disinfection by the steam process, the simple plan of boiling the articles to be disinfected should be adopted. We intimated that it is not necessary to detain the train or all the passengers while the disinfection takes place, and that only passengers with suspicious effects need be detained until the disinfection of those effects is completed, except in the case of passengers who are themselves suspicious and who must be detained until the medical officer is satisfied that they may proceed. And with a view to prevent evasion we suggested that the names of all suspicious persons leaving the train at stations within twenty miles on one side of the disinfecting station should be taken and given to Station Masters within twenty miles on the other side, with instructions not to rebook them.

In a subsequent letter to the Government of Bombay and circular to other Local Governments and Administrations, detailed instructions, based on the advice of our Officiating Sanitary Commissioner, were given with regard to the best manner for carrying out the process of disinfection by boiling and of treating articles which would be injured by that process. To this Despatch is also appended a copy of a letter issued in our Public Works Department containing instructions for the disinfection of railway carriages coming from infected areas or in which cases of plague have occurred or been suspected.

10. In view of the alarm evinced by Russia at the possible spread of plague to Russian territory, we have given particular consideration to instituting special precautions on our side of the Afghan and Baluch frontiers. In paragraph 7 of our Despatch of the 14th instant, we mentioned the precautions that had been taken in the Punjab and on the Baluchistan railway. To this Despatch is appended a copy of further correspondence on he same subject with the Government of the Punjab and the Agent to the Governor General in Baluchistan. The letter from the Government of the Punjab, No. 714, dated he 17th April 1897, gives a summary and some further particulars of the precautionary measures adopted in the Punjab. They have so far been found satisfactory, and the Lieutenant-Governor considers that so long as the Punjab remains free from the disease, he protection of Afghanistan will be as efficiently secured by the measures adopted on he east and south frontiers of the Province as by any special arrangements on the north and west frontiers. The Lieutenant-Governor suggests that if unhappily the Punjab or any part of it becomes an infected area, it may be necessary to establish an inspection cordon for the special protection of Afghanistan, but he would await the development of events before deciding precisely what line to take up in such a case. In this view we concur; and do not propose to order any extension of the protective system at present.

Similarly we are satisfied that all possible precautions have been adopted in the Baluchistan Agency. So far they have met with success, and there have been no local cases of plague in any part of the Agency. Quarantine has for some time past been mposed at the Mekran ports, and in addition to rigorous inspection on the railway, all roads from the Shikarpur border are carefully watched on both sides of the boundary, and he tribal levies of Las Bela prohibit travellers from Karachi from crossing the border. The 38th enclosure of this Despatch, being an extract from a letter received from His Highness the Amir of Afghanistan,† expresses a satisfaction with the completeness of our precautionary arrangements, which is distinctly not to be ascribed to failure to realize the gravity of his danger.

11. In conclusion we forward for Your Lordship's information a copy of Regulations* issued by Local Governments and Administrations under the Epidemic Diseases Act, and some of the more important orders recently issued by the Government of Bombay.

We have, &c.,
(Signed) ELGIN.
&c., &c.

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* Not reprinted. † See page 35.

Enclosures.

STATEMENT showing BUBONIC PLAGUE CASES and DEATHS (imported as well as indigenous) in the BOMBAY PRESIDENCY reported to GOVERNMENT from September to Week ending 16th April 1897.

Periods.	2. Bombay City.				3. Karachi City.				4. Poona City, including Suburb and Cantonment.				5. Ahmedabad District.				6. Kaira District.			
	Plague Cases.	Plague Deaths.	Total actual Mortality from all Causes.	Total average Mortality from all Causes.	Plague Cases.	Plague Deaths.	Total actual Mortality from all Causes.	Total average Mortality from all Causes.	Plague Cases.	Plague Deaths.	Total actual Mortality from all Causes.	Total average Mortality from all Causes.	Imported.		Indigenous.		Imported.		Indigenous.	
													Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Total as per Statement for period from September to week ending 9th April, 1897.	11,146	9,459	36,145	—	3,446	2,881	5,424	—	2,129	1,490	4,775	—	109	61	20	13	19	14	—	—
During week ending 16th April, 1897.	362	363	934	589	177	123	178	58	195	149	208	79	4	2	1	1	—	—	—	—
Total	11,508	9,822	37,079	—	3,623	3,004	5,602	—	2,324	1,639	4,983	—	113	63	21	14	19	14	—	—

Periods.	7. Broach District.				8. Surat District.				9. Thana District.				10. Ahmednagar District.				11. Khandesh District.			
	Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Total as per Statement for period from September to week ending 9th April, 1897.	17	12	1	—	162	104	1,274	969	658	355	3,035	2,514	45	29	3	3	29	10	—	—
During week ending 16th April, 1897.	—	—	—	—	10	8	260	196	28	15	303	233	—	—	—	—	1	—	—	—
Total	17	12	1	—	172	112	1,534	1,165	686	370	3,338	2,747	45	29	3	3	30	10	—	—

STATEMENT showing BUBONIC PLAGUE CASES and DEATHS (imported as well as indigenous) in the BOMBAY PRESIDENCY reported to GOVERNMENT from September to Week ending 16th April 1897—*continued.*

Periods.	12 Nasik District.				13 Poona District, excluding the City.				14 Satara District.				15 Sholapur District.				16 Kolaba District.			
	Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Total as per Statement for period from September to week ending 9th April, 1897.	42	30	2	2	146	131	16	12	68	54	88	71	11	7	4	4	108	101	382	298
During week ending 16th April, 1897.	1	—	2	2	23	12	—	1	4	3	—	—	2	1	—	—	4	4	146	146
Total	43	30	4	4	169	143	16	13	72	57	88	71	13	8	4	4	112	105	528	444

Periods	17 Ratnagiri District.				18 Belgaum District.				19 Dharwar District.				20 Kanara District.				21 Baroda Territory.			
	Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Total as per Statement for period from September to week ending 9th April, 1897.	224	195	78	60	2	1	—	—	1	—	—	—	1	—	—	—	67	46	199	172
During week ending 16th April, 1897.	3	2	14	10	—	—	—	—	—	—	—	—	—	—	—	—	1	—	55	45
Total	227	197	92	70	2	1	—	—	1	—	—	—	1	—	—	—	68	46	254	217

STATEMENT showing BUBONIC PLAGUE CASES and DEATHS (imported as well as indigenous) in the BOMBAY PRESIDENCY reported to GOVERNMENT from September to Week ending 16th April 1897—*continued.*

Periods.	22 Kathiawar.				23 Kolhapur.				24 Cutch.				25 Mahi Kantha.				26 Palanpur.				27 Savantvadi.			
	Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Total as per Statement for period from September to week ending 9th April, 1897.	74	37	72	49	11	9	**55	**46	149	94	54	45	3	1	—	—	2	2	106	63	25	24	—	—
During week ending 16th April, 1897.	2	2	18	13	—	—	2	1	2	—	25	10	—	—	—	—	—	—	21	16	—	—	—	—
Total	76	39	90	62	11	9	57	47	151	94	79	55	3	1	—	—	2	2	127	79	25	24	—	—

1 Periods.	28 Karachi District, excluding the City.				29 Hyderabad District.				30 Shikarpur District.				31 Upper Sind Frontier District.				32 Thar and Parkar.				33 Plague among Europeans.			
	Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Bombay.		Mofussil.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Total as per Statement for period from September to week ending 9th April, 1897.	148	108	25	20	56	48	195	129	67	48	315	213	2	2	1	1	3	2	—	—	39	14	‡5	§1
During week ending 16th April, 1897.	8	7	*3	*3	9	7	149	107	5	1	114	†84	1	—	—	—	—	—	—	—	—	—	—	—
Total	156	115	28	23	65	55	344	236	72	49	429	297	3	2	1	1	3	2	—	—	39	14	5	1

** Owing to later reports these figures have been slightly revised. * Of these, 2 cases and 1 death at Tatta are reported as "apparently indigenous." † Of these, 2 deaths at Sukkur are previous ones subsequently reported. ‡ Of these, 3 occurred at Poona, 1 at Ahmedabad, and 1 at Karachi. § Took place at Karachi; the deceased was a European girl born in Burma.

TELEGRAM No. 161–P., dated 15th April 1897.

From the Secretary to the Government of Bombay to the Secretary to the Government of India, Home Department.

Plague progress report from Palanpur shows 111 reported cases up to date. No means of estimating number concealed cases. Doctor Cleveland arrived on second instant and Doctor Lowson has paid a visit. Plague cases not confined to any particular quarter of the town. Four hospitals started, each has separate place for segregation infected persons. Some opposition is being given to isolation. Persons leaving Palanpur are examined and names and addresses taken. Suspicious persons detained. Probably little reliance can be placed on returns received before Cleveland's arrival.

(Sanitary No. 1309.)

NOTIFICATION.

Simla, 17th April 1897.

Whereas His Highness Maharaja Sir Madho Rao Sindhia Bahadur, G.C.S.I., Maharaja of Gwalior, has, owing to the danger of an outbreak of dangerous epidemic disease in his territories, prohibited the assemblage of persons at Ujjain for the Singhast Mela;

And whereas the Governor General in Council is satisfied that such danger as aforesaid exists;

In exercise of the powers conferred by section 2, sub-section (1), of the Epidemic Diseases Act (III of 1897), the Governor General in Council is pleased to direct that no tickets to travel by railway to Ujjain, or to the station on the railway next on either side of Ujjain, that is to say, to Fatehabad Junction or to Tajpur or to Aslaoda, shall be sold from the date of this notification, until the 18th day of May 1897, by any railway administration in British India to any pilgrim or other person intending, or believed to be intending, to visit the Singhast Mela.

J. P. HEWETT,
Secretary to the Government of India.

No. 349–R.T. GOVERNMENT OF INDIA. Public Works Department. Railway Traffic.

To the Joint Secretary to the Government of Madras, Public Works Department, Railway Branch. The Secretary to the Government of Bombay, Public Works Department, Railway Branch. The Secretary to the Government of Bengal, Public Works Department. The Chief Commissioner of Assam. The Resident at Hyderabad. The Agent to the Governor General for Rajputana. The Director General of Railways. The Consulting Engineers to the Government of India for Railways, Calcutta, Lucknow and Assam.

SIR, Simla, 21st April 1897.

The Government of India have had under consideration the advisability of cleansing all vehicles conveying passengers and their luggage from districts affected with the bubonic plague to other parts of India, and are of opinion that the disinfection of all such vehicles is absolutely necessary as a precautionary measure against the spread of infection.

2. For this purpose it is considered imperative that vehicles in which suspected or declared cases of plague have occurred should be stopped at, and not allowed to run further than, either the station at which such cases are removed from the carriage or the nearest medical inspection station,—preferably the former if the process of disinfection can be promptly and satisfactorily carried out there,—while non-suspect vehicles should be disinfected at the medical inspection station nearest to the boundary of infected areas. This need involve no detention to the latter beyond that necessary for their actual disinfection, the inspection of the occupants and the disinfection of their baggage.

3. The Government of India accordingly desire that, subject to the foregoing remarks, the administration (s) of the railway (s) under $\frac{\text{the control of the Government of}}{\text{your control}}$ be requested to disinfect all vehicles conveying passengers and their baggage from areas infected with the bubonic plague in the following manner :—

(*a*) Vehicles in which cases of plague have *not* been detected—

Third and intermediate class carriages, goods vehicles carrying passengers, and luggage vans.—The interior wood-work, especially the floors and seats, to be thoroughly washed with a solution of perchloride of mercury (1 in 1,000), or with a carbolic acid solution (a wine-glass full to a gallon) applied with a mop ; the doors and windows to be opened and the vehicles exposed to the air.

First and second class carriages.—The floors and wood-work to be treated as above, the cushions being also brushed and thoroughly cleaned.

(*b*) Carriages in which cases of plague *have been* detected—

(*i*) These, after being detached from the train, should be thoroughly washed with soft soap and lime-water. After an interval of two to three hours this should be washed off with plain water, and then the following disinfecting solution should be thoroughly sprayed all over the interior as well as the exterior of the carriages by means of a syringe :—

Corrosive sublimate	½ oz.
Hydrochloric acid	1 „
Water	3 gallons.

This solution should be allowed to dry on the carriages. Special care must be taken to direct the solution into all the cracks and crevices and jilmills.

(*ii*) After disinfection, the carriages should be kept out in the open for 48 hours. They can then be brought into use again.

(*iii*) In the case of first and second class carriages, which afford greater facilities than third class compartments for the harbouring of plague germs, it will be necessary, if the carriages are contaminated, to burn the cushions and to disinfect the wood-work in the manner indicated above, and repaint the interior.

(*iv*) Any compartment in which a suspicious case has travelled should be sprayed with the above disinfecting solution before being allowed to proceed.

I have, &c.,
(Signed) G. A. ANDERSON,
Under Secretary.

No. 1197-I. A., dated Fort William, 26th March 1897.

From W. J. CUNINGHAM, Esq., C.S.I., Secretary to the Government of India, Foreign Department, to the Chief Secretary to the Government of the Punjab.

The Amir's Agent with the Government of India recently reported the presence in Calcutta of two Afghan subjects who had arrived here with the intention of proceeding on pilgrimage to Mecca. On learning the orders of the Governor-General in Council suspending the pilgrimage to the Hedjaz, they expressed themselves ready to return to their homes, and the Government of Bengal was accordingly requested to arrange for the free issue to them of third-class tickets to Peshawar.

2. In view of the general anxiety in Europe in respect to the possible spread of the bubonic plague and, in particular, of the sanitary arrangements undertaken by the Russian Government on the Persian and Afghan frontiers, very serious results might follow if an intending pilgrim, who had been given free railway fare to Peshawar, or any other frontier station, and had been allowed to pursue his journey, were to carry the plague over the border, or were even reported to have done so. Her Majesty's Secretary of State for India has, in recent telegrams, laid special stress on the importance of adopting the most thorough quarantine precautions upon the British side of the Afghan frontier. The subject is one which presents great difficulties and requires most careful but urgent consideration.

3. One hundred and fifty intending pilgrims from Central Asia, besides some from Afghanistan, were recently sent from Nasik to Peshawar. You were informed that, if the Lieutenant-Governor saw no objection, the Central Asian pilgrims might for the present remain at Peshawar, but no instructions were issued regarding the Afghan pilgrims, the majority of whom would probably desire to return to their homes. If a large number of these pilgrims were collected at Peshawar, they might give trouble, though, on the other hand, they might occupy themselves peaceably during their stay there. The Afghan pilgrims, whether from Nasik or Calcutta, were the fellow-travellers of the Central Asian pilgrims, and were under the same conditions. The matter is further complicated by the fact that there is a large influx of Afghans into India yearly in the cold weather. The Amir may, it appears to the Government of India, reasonably expect from the Government of India a medical inspection of travellers returning to Afghanistan, at any rate on the main routes; while the grant of facilities for return might raise difficulties with the Amir or with the Russian Government. On the other hand, it is scarcely possible to forcibly detain Afghan subjects desirous of returning to their homes, or even to deny to disappointed pilgrims their railway fares to frontier stations. It has been suggested that work might be provided for such travellers in the Punjab, and something might, perhaps, be effected in this direction, at any rate in the case of destitute Central Asian pilgrims. The expedient does not, however, appear a very hopeful one.

4. I am to request that His Honour the Lieutenant-Governor will give the whole question his very earnest attention, and will favour the Government of India, at the earliest possible date, with any advice which he can see his way to offer.

They will be glad if His Honour will, after considering the question, determine how the medical inspection of Afghans desirous of re-entering Afghanistan can be most efficiently provided for.

TELEGRAM No. 583 E.-A., dated 24th March 1897.

From the Secretary to the Government of India, Foreign Department, Calcutta, to the Agent to the Governor-General in Baluchistan, Quetta.

There may be grave risk of plague reaching Mekran owing to continual departures by sea from Karachi and Bombay. It is understood Khan has hospital assistant at Kej, who might be instructed to look out for information. Perhaps one or two Muhammadan hospital assistants might be deputed to tour along coast and keep watch for any outbreak. Please telegraph your opinion and any suggestions you have to make.

TELEGRAM No. 99, dated 26th March 1897.

From the Agent to the Governor-General in Baluchistan, Quetta, to the Secretary to the Government of India, Foreign Department, Calcutta.

Your 583 E.-A., 24th inst. Khan has an assistant surgeon in Kej. I will direct Nazim at once to see that reports are sent to him from all ports on coast and to keep me informed. I will also ask him, if possible, to send assistant surgeon on tour to the ports and to impose quarantine if practicable. I think this will be sufficient.

TELEGRAM No. 1222 I. A., dated 2nd April 1897.

From the Secretary to the Government of India, Foreign Department, Simla, to the Secretary to the Government of Bombay, Political Department.

With reference to precautions against import of plague into Baluchistan, can you give any information as to traffic between Bombay or Karachi and ports on Mekran coast, and also as to traffic by road from Karachi into Baluchistan and by other main routes from Sind by which infection might be carried.

TELEGRAM No. 1270, dated 12th April 1897.

From the Secretary to the Government of India, Home Department, Simla, to the Agent to the Governor-General in Baluchistan.

Continuation correspondence ending my telegram 1202, dated 5th.

It is stated in newspapers that all 3rd class passengers for Baluchistan are detained for 10 days, and camp is therefore expected to increase day by day until tenth day. Such an arrangement was not contemplated in my telegram of 28th. Please telegraph if newspaper report is correct, and generally nature of arrangements made at Sibi.

TELEGRAM No. 168, dated 13th April, 1897.

From the Agent to the Governor-General in Baluchistan, Quetta, to the Secretary to the Government of India, Home Department.

Your 1270, Sanitary. Newspaper report incorrect. All third class passengers are not detained for ten days. There is rigorous medical inspection at Sibi, under supervision of Commissioned Medical Officer and Assistant Political Agent ; and in exercise of their discretion and with my approval, Medical Officer detains as plague suspects all native passengers from infected places in Sind, unless they produce certificate from Plague Committee of place of departure, or other proof that they have come from non-infected quarter. Other passengers travelling in same carriage with plague suspects are merely detained few hours for disinfection. Also, as numerous refugees from Sukkur were found alighting desert stations and fleeing Kalat territory, orders have issued stopping them alighting and requiring them to proceed Sibi first for inspection. In my opinion no measures short of this will prevent plague reaching Baluchistan. They have worked well and are cordially approved by all classes of community, even by those whose families are detained. There has not been one complaint, and number in camp yesterday, after fortnight's working, was only 304 ; this is maximum as exodus from Sind is decreasing. Measures adopted are less rigorous than those taken by Bombay Government in Sind towns like Jacobabad, where local quarantine is enforced ; and in interests of this province, I strongly deprecate any relaxation. If plague reaches Quetta, we shall have much trouble with Pathan population.

TELEGRAM No. 1297, dated 15th April 1897.

From the Secretary to the Government of India, Home Department, to the Agent to the Governor-General in Baluchistan, Quetta.

Your telegram 168, dated 13th. Government of India approve measures you have taken to prevent plague reaching Baluchistan, and do not wish them relaxed in any particular.

TELEGRAM No. 19–M., dated Mahableshwar, 7th April 1897.

From the Secretary to the Government of Bombay, Political Department, to the Secretary to the Government of India, Foreign Department.

Yours 1222–I. Deputy Commissioner, Jacobabad, wires :—*Begins.* Road traffic with Baluchistan not heavy. Chief danger by rail from Sakkur, also by road *viâ* Shikarpur and Jacobabad. All roads being carefully watched on Shikarpur border. This district so far entirely free from plague. *Ends.* Collector, Karachi, wires :—*Begins.* Pages 168 and 169, Sind Trade and Navigation Blue Book for 1895–96, give quantity and details of articles exported from Karachi to Mekran and Sonmiani. Karachi and Shikarpur districts separated from Baluchistan by range of barren hills with only one road to Sonmiani ; for some time persons attempting to cross from Karachi have been prevented by the tribal levies of Las Bela State. Only possible not probable routes for infection in the frontier district. *Ends.* I think all Bombay trade for Baluchistan must go *viâ* Karachi, but have addressed Collector, Bombay, and will wire again on receipt of his reply if I find it necessary.

TELEGRAM, No. 961–F., dated 15th April, 1897.

From the Secretary to the Government of India, Foreign Department, to the Agent to the Governor-General in Baluchistan, Quetta.

Your telegram 99, March 26. It appears necessary to impose sea quarantine at Sonmiani and principal ports westwards which are understood to be Ormara, Pasni, and mouth of Dasht river. Do you agree and what assistance would you require for purpose? Quarantine has for some time been in force at Gwadur. Bombay report Bela levies are watching land routes from Sind, this is satisfactory; I presume Political Agent is directing them. All roads on Shikarpur border are being carefully watched on Sind side. You should arrange to have them watched from Baluch side and suspicious persons turned back.

TELEGRAM No. 185, dated 16th April 1897.

From the Agent to the Governor-General in Baluchistan, Quetta, to the Secretary to the Government of India, Foreign Department.

Your 961–F. Nazim Mekran reports, dated 8th April, that according to orders sent from here three weeks ago he has ordered quarantine at Pasni and Kalmat ports, and is sending Khan's Assistant Surgeon from Kej to inspect coast. Nazim reports no plague in Mekran. Benn, who has just returned from there and Persian border by Mand, says same. Have consulted Political, Karachi, and Director, Persian Telegraphs, about your telegram.

No. 714, dated Lahore, 17th April 1897.

From H. J. MAYNARD, Esq., Junior Secretary to the Government of the Punjab, to the Secretary to the Government of India, Foreign Department.

I am directed to acknowledge the receipt of your letter No. 1197 I.-A. of 26th March 1897, and to communicate the following remarks on the subject of the proposed measures against the exportation of plague from the Punjab into Afghanistan.

2. In the first place Mr. Young desires to draw attention to the fact that, notwithstanding the occasional importation of the disease by travellers from Bombay and Sind, there have up to the present time been no local cases of plague in the Punjab, with the exception of two which took place at Delhi some months ago in the house occupied by a recent arrival from Bombay who was himself infected.

3. The province is protected by a system of inspection at railway stations, ferries and road posts, of the general character of which the Government of India are already aware. In addition to the inspection of travellers alighting from trains at a large number of stations which include all district head-quarters and all cantonments on or near the line of railway and all terminuses for hill stations, there are special inspections, at which all passengers are examined at certain points which have been so selected as to enable the work to be done by daylight. Passengers from Sind are all inspected at Khanpur or at some neighbouring station, the actual place of inspection being varied from time to time to provide against the practice of evading inspection by marching across country. All intermediate and third class passengers are now detained for 24 hours at Khanpur, in order to undergo the disinfection of their clothes and personal effects, and an Assistant Commissioner has been placed on special duty there to superintend the arrangements. A second line of defence against the danger from Sind is provided by inspection of all passengers either at Sher Shah or at Raiwind, all passengers for the Sind-Sagar line being inspected at the former place. Passengers from the Bombay direction by the Bombay-Baroda Central India line undergo inspection either at Bhatinda or at Ferozpore according to the train by which they arrive, while those travelling by the East Indian Railway, after undergoing inspection at Ghaziabad in the North-Western Provinces, are again inspected either at the junction of Wazirabad or at Jhelum, according to the train by which they arrive.

4. Passengers up the Indus from Sind are stopped at the ferry of Mithankot and there examined. Entry into the Dera Ghazi Khan district from Sind or from the Native State of Bahawalpur, which lies on the opposite side of the Indus, is prohibited otherwise than by way of Mithankot or Rojhan, a road inspection post situated at the extreme south of the district.

5. A record is kept by the police of all arrivals from the infected provinces, and particular attention is paid to deaths occurring among such peasons with a view to immediate detection of cases of plague. It has been made legally incumbent upon certain persons including village officials, householders and serai-keepers to report at once all arrivals from infected provinces and all suspicious cases of disease. The District Magistrate and any 1st class Magistrate or Commissioned Medical Officer, to whom he may delegate the power, has legal authority to remove a plague patient to hospital, and to destroy or disinfect any building which he has occupied. Many minor matters have also been provided for by Regulations issued under the Epidemic Diseases Act, 1897, and it is believed that such machinery as can be provided exists for the discovery and stamping out of the disease as soon as it shows itself.

6. So long as the Punjab is free from the disease, the protection of Afghanistan will be as efficiently secured by the measures adopted on the East and South frontiers of the Province as by any special arrangements on the North and West frontiers. Every effort is being made to detect cases which may be imported across the former frontiers, and if this province does not receive the infection it will not pass it on. If unhappily the Punjab or any part of it becomes an infected area, then the Lieutenant-Governor thinks that apart from any measures which may be taken for dealing with such an area, it may be necessary, in pursuance of the orders of the Government of India expressed in their letter under reply, to establish an inspection cordon for the special protection of Afghanistan. The detention in the Province of all persons intending to go to Afghanistan would, in His Honour's opinion, be impossible and, for reasons similar to those given in your telegram No. 935, dated the 13th of March 1897, about quarantine on the southern border, impolitic ; but it would be only right that our line of defence should be shifted behind the invaded area. Mr. Young suggests that we should await the development of events before deciding precisely what line to take up in such a case. As an ultimate resort the establishment of an inspection cordon at the ferriers on the Indus (which could be made fairly effective owing to the rising of the river which must already have begun), or even the establishment of inspection posts at each of the principal passes into Afghanistan may be adopted, though it is manifest that either measure will, if we have the plague upon us, most seriously tax the resources of the Province, and the latter alternative would afford but little prospect of success.

7. Meanwhile the inspection of all persons alighting from the railway at Peshawar, Attock, Khusalgarh, Kundian, Darya Khan, Ghazi Ghat, combined with the measures taken at Khanpur, Sher Shah and Raiwind on the North-Western system and at stations on the Eastern and Southern frontiers, affords as good a prospect as can for the present be devised for preventing the exportation of plague cases from the Punjab to Afghanistan.

8. As regards the pilgrims from Nasik, to whom reference is made in your letter under reply, it is understood that they have all dispersed. An enquiry has been addressed to the Deputy Commissioner, Peshawar, on the subject, and the facts will be communicated to the Government of India when his reply is received.

Extract from a letter from His Highness the Amir of Afghanistan to His Excellency the Viceroy, dated the 8th April 1897.

As regards necessary precautions for the prevention of the plague, Your Excellency writes that we should endeavour to guard against the plague spreading from one place to another, and that if the plague should appear, which God forbid, in Afghanistan, I should inform your Excellency with the least possible delay, so that with the aid of doctors measures might be taken to stamp out the disease. My kind friend, the proper measures are those which have been undertaken both by the illustrious British Government and myself, under which travellers are detained for a certain fixed number of days at each post and kept under observation, so that any person affected with this disease may not go from one country to another.

But as everything lies in the hands of the Supreme Creator, I am offering prayers to Him that His Exalted Majesty may remove this life-destroying calamity from all countries of the world, so that all the creatures of God may remain safe from it.

By the grace of God up to the present no sign of the disease has appeared in this country. But if it is predestined to appear hereafter, the best thing would be to seek the grace and kindness of the Supreme Doctor. It has not been heard as yet that, under the treatment of the existing doctors, even five per cent. of the persons afflicted by such a disease have recovered. On the contrary I have heard that, with the exception of their burning the clothes and houses of the afflicted persons, they have not been able to administer any other remedy.

Consequently, under these circumstances, it is better to invoke the aid of God by praying for His grace and kindness.

Telegram No. 200, dated the 20th April 1897.

From the Agent to the Governor-General in Baluchistan, Quetta, to the Secretary to the Government of India, Foreign Department.

My 185. Political Agent, Southern Baluchistan, reports that ten days' sea quarantine has been established for months on Bela coast from Sonmiani to Ormara inclusive. Have told him to make it as effective as possible. Hospital Assistant from Bela is going to coast. It is very open for landing up to monsoon. Have arranged for watching on Baluchistan side of routes from Shikarpur border.

No. 1975—1446-P., dated Bombay Castle, 12th April 1897.

RESOLUTION—By the Government of Bombay, General Department.

His Excellency the Governor in Council is pleased to make the following rules under Act III. of 1897, and to publish them for general information :—

1. The Bombay Plague Committee is hereby authorized to appoint persons as plague authorities.

2. Such plague authorities are hereby empowered to medically inspect persons coming to Bombay Island by sea, by vessels, including native craft, which have touched at any port in India between Bhatkal and a line ten miles north of Karachi, and to detain or send for detention to such hospitals or other places as may be appointed by the Bombay Plague Committee for the purpose any persons whom they find or suspect to be suffering from plague.

3. The master of every vessel, including buggalows and every kind of native craft arriving at the Port of Bombay from or having had communication with any place on the West Coast of India, between Bhatkal and a line ten miles north of Karachi, on board of which there is, or has been during the voyage from which she is arriving or has last arrived, either among the passengers or crew, any case or suspicious case of bubonic plague, or if one or more deaths from any cause whatever shall have occurred on board on the said voyage, shall report the same at the earliest possible moment by signal to the Health Officer of the Port or through the Pilot or Water Police.

4. If the vessel is coming into port, the master shall report such cases to the pilot or other boarding officers at the earliest possible opportunity, or if she be not boarded, or is already at anchor within port limits, shall hoist a signal, which shall be, during the day, the flag R of the Commercial Code at the main, and during the night, at the same place, 3 lights, namely, red, white and red, and shall also verbally by an officer, or in writing, inform the officer in charge of the Harbour Police. It shall be the duty of the Pilot or other officers to whom such report under Rule I. is made to communicate the same without delay to the Health Officer of the Port.

5. Pending the arrival of Health Officer of the Port, the Master shall anchor in the stream, and shall not permit the departure or landing of any of his crew or passengers until permitted to do so by the Health Officer of the Port.

6. The Masters of vessels to which rule 3 is applicable and the Masters of all vessels arriving from the ports or places inside the limits prescribed in rule 3 shall only permit the disembarkation of their crews and passengers between the hours of 6 a.m. and 6 p.m., and at such bandars or places as may be directed by the Health Officer of the Port.

NOTIFICATION.—General Department, Bombay Castle, 15th April 1897.

No. 2060—1507-P.—The following rules are issued under Act III of 1897 :—

1. The Bombay Plague Committee are hereby empowered to appoint medical men as Plague authorities at railway stations in the Thána district for the purposes of these rules. Such plague authorities shall have power to inspect railway passengers, intending railway passengers, and other persons found in railway trains, or at the railway stations to which these rules are or may hereafter be applied, and to detain and send to hospitals or other places appointed for the purpose persons found or believed to be suffering from plague.

2. These rules are hereby made applicable to the railway stations of Kalyán, Thána and Coorla on the Great Indian Peninsula Railway, and Pálghar, Santa Cruz and Bándra on the Bombay, Baroda and Central India Railway.

3. The medical staff appointed by Government at the stations of Kalyán and Pálghar for the purposes of the inspection referred to in Government Resolution No. 723—211-P., dated 10th February 1897, shall be considered plague authorities for the purposes of these rules.

4. On the Great Indian Peninsula Railway, persons travelling by up through trains shall be medically inspected at Kalyán, and no further medical inspection of such trains will be requisite, but no passengers shall be allowed to enter such trains at any station between the stations of Kalyán and Coorla, except at Thána. All local up trains shall be emptied and their passengers medically inspected at Coorla, but no passengers shall be allowed to book from Coorla till they have been medically inspected.

5. On the Bombay, Baroda and Central India Railway, up trains starting from stations north of Bándra shall be stopped for medical inspection of their passengers at Santa Cruz, except in the case of the up mail train, the passengers by which shall be inspected at Pálghar. No persons shall be allowed to book at Bándra Station by up trains until they have been medically inspected.

6. Season ticket holders and free pass holders will ordinarily be excused from inspection ; but the plague authorities may inspect them in any cases in which they consider it desirable to do so.

7. The plague authorities under these rules shall be placed under the immediate orders of Surgeon-Major Street, who is authorized to make all necessary arrangements and to commence inspection under these rules as soon as his arrangements are completed.

J. DEC. ATKINS,
Secretary to Government.

From the GOVERNMENT OF INDIA to the SECRETARY OF STATE FOR INDIA.

(Sanitary No. 15.)

MY LORD, Simla, the 12th May 1897.

IN continuation of our Sanitary Despatch No. 14, dated the 28th April 1897, we have the honour to forward, for Your Lordship's information, a further report on matters connected with the plague.

2. The substantial decrease in the number of seizures and deaths in the City of Bombay continues and the total mortality is approaching the normal. Our Despatch of the 28th April recorded, for the week ending the 26th of that month, the greatly reduced numbers of average daily seizures and deaths of 34 and 29 respectively. During the following week the number fell to 27 and 21, whilst for the week ending the 10th instant, the figures were 23 and 15. During the week ending the 26th April the average daily

number of deaths from all causes was 95, during the following week 91, and during the week ending the 10th instant 83. During the period of the preceding five years corresponding to this last week the average daily mortality was 82. In consequence of the improvement in the health of the city, the inhabitants who fled from the place are steadily returning. To this Despatch are appended a series of charts,* showing the course of the plague in Bombay, Karachi, and in other places. The first chart compares the total mortality from the middle of May 1896 up to the end of April 1897 with the average mortality during the preceding five years. The fact that from the beginning of August onwards the total mortality was considerably in excess of the normal, particularly among diseases connected with the respiratory organs, leaves little doubt that plague existed in Bombay for some time before it was brought to the notice of the local authorities and of the Government of India.

3. The marked improvement in the condition of Poona continues. The cases have diminished in the Thana, Surat and Kolaba districts. In the first two the malady has ceased to be epidemic in all but a few villages, whilst in the last it continues to be severe in six villages. The outbreak in Palanpur appears to have almost died out. On the other hand, the outbreak in Cutch is virulent. Two Commissioned Medical Officers of experience have been sent to the State to advise His Highness the Rao. The disease is specially rife in the port of Mandvi, where the total number of deaths, most of which are attributable to plague, is stated by the Political Agent to amount to about 110 a day. In Baroda also, and especially in the Naosari division, the number of seizures has of late increased. We have been in communication with the Agent to the Governor-General on the subject, and he reports that preventive and precautionary measures are carefully carried out. The City of Baroda is vigilantly watched, and except for a few isolated cases has fortunately escaped.

4. The condition of affairs in Sind shows, on the whole, a steady improvement. In our last Despatch we informed your Lordship that during the eight days ending the 26th April the average daily numbers of seizures and deaths in Karachi were 22 and 15 respectively. During the following week the figures were 15 and 11, and during the six days ending the 9th inst. 10 and 9. In Sukkur the number of cases have fallen to one or two a day, and in the Hyderabad and Karachi districts the malady has become less prevalent. In the Shikarpur district there has been some increase in the number of cases, and the infection has spread up the North-Western Railway as far as Ghotki, without, however, taking a very strong hold on the locality.

5. Outside the Bombay Presidency and Sind no cases of plague have been detected since the date of our last Despatch. An alleged case has been reported from Saharanpur in the North-Western Provinces, but it appears to us very doubtful, on the facts as reported to us, whether the case was really one of plague. The case reported in our last Despatch from Kohala, in Kashmir, has also on investigation been found not to be one of plague. The deceased had been suffering for a long time from phthisis and fever contracted in Burma, and had not been in a plague-infected area. The case was incorrectly diagnosed at Kohala. The plague is and has for some time been rife in the Portuguese territory of Damaun, which lies to the south of the District of Surat, but we have not received any information regarding the number of cases that have occurred.

6. In our telegram No. 1426, dated the 3rd inst., we informed Your Lordship that eight local cases of plague had been detected at Hardwar, in the Saharunpur district, and a brief account was given of the circumstances and of the measures adopted to prevent the spread of the infection. To this Despatch is appended a full report on the subject by the Government of the North-Western Provinces and a copy of the measures prescribed by that Government under the Epidemic Diseases Act, 1897. No further cases have been reported since the case on the 22nd April, and we share the hope expressed by the Lieutenant-Governor that the measures adopted have stamped out the disease. The infected quarter, in which all the cases but one occurred, and which contained about 300 inhabitants, has been evacuated, and the people are accommodated in a camp provided by the Government. The residents of the camp are kept under a careful medical surveillance and their homes are being thoroughly disinfected.

The next religious gathering at Hardwar takes place at the end of the present month. The Lieutenant-Governor is at present considering whether it will be necessary to prohibit it.

7. A further report from the Government of the North-Western Provinces regarding the outbreak of "mahamari" in the Gharwal district is enclosed. The outbreak died out

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* Not reproduced.

after causing the death of seventeen persons. The most careful precautions were taken to prevent the spread of infection and to guard against a recurrence of the malady in the same locality. The Lieutenant-Governor is now considering whether it is safe to re-open the direct road of pilgrimage to Kedernath.

8. In paragraph 6 of our Sanitary Despatch of the 14th April we assured Your Lordship, with reference to the remarks contained in paragraph 7 of your Despatch of the 7th March, that the importance of affording prompt and sufficient medical treatment to the sick had been everywhere fully realised. We gave a rough outline of the arrangements that had been made, and promised to furnish Your Lordship in a later Despatch with detailed information as to the places at which plague hospitals have been erected and as to the arrangements made for the employment of women doctors in plague wards for women. The telegrams from the several Local Governments and Administrations, which are appended to this Despatch, give this detailed information.

Outside the Bombay Presidency and Sind only a few isolated cases of plague have been detected, and it has therefore only been necessary to make arrangements for treating the rare cases discovered in the medical inspection of travellers, and for the supply of immediate aid should plague break out in any important centre of population. But in the Bombay Presidency and Sind arrangements have been made and carried into force for the treatment of large numbers of persons. The following is the outline of the arrangements reported by the Government of Bombay :—

In the City of Bombay 3 large hospitals, 11 Government temporary hospitals, and 27 private community hospitals, each with a sufficient medical staff, are in use for the treatment of persons suffering from plague. For inspection purposes the City is divided into ten districts, each with a medical staff and 6 with lady doctors. The medical and nursing staff consist of 14 officers of the Indian Medical Service, 2 medical officers of the merchant service, 29 native doctors, 12 nurses from England, 18 nurses engaged in India, 18 Roman Catholic Sisters, and 4 Protestant Sisters.

In Poona there are three large plague hospitals with medical staff, and the Sassoon Hospital with its ordinary Nursing Staff, as well as three nurses from England.

In Karachi three permanent hospitals and five temporary hospitals have been established by Government, besides several temporary private hospitals for different communities, superintended by Officers of the Indian Medical Service. The staff of the Government hospitals consist of 3 Officers of the Indian Medical Service, 2 paid private doctors, a number of subordinates, and 13 lady doctors, Sisters, Zenana Mission ladies, and paid nurses.

In Hyderabad in Sind the plague hospital is under the Civil Surgeon, aided by numerous subordinates, and 4 European and 4 native nurses. There is also a Hindu private hospital with a considerable subordinate staff, supervised by the Civil Surgeon, and with 3 European nurses and Zenana Mission ladies.

In the Bombay Presidency proper 9 Commissioned Medical Officers, 4 private doctors, and 74 subordinates are engaged on railway inspection work. In rural localities the plague hospitals are managed on the same principle as the permanent civil hospitals. The Government of Bombay promise to give further information upon this subject.

In Madras, hospital accommodation has been provided at the railway inspection stations at Guntakal, Perambur, Arkonam, Kondepalli, Tuticorin, and Madras City. The medical staff employed on the prevention of the plague consists of 3 Commissioned Medical Officers, 3 Assistant Surgeons, 2 Civil Apothecaries, 15 Hospital Assistants, and one female doctor at Tuticorin. Trained nurses are being deputed to other places. The medical officers and subordinates at the seaports have been gazetted Port Health Officers under the plague quarantine rules.

In Bengal well-appointed plague hospitals have been established at the railway inspection stations of Khana, Katihar and Damukdia. The staff at these three places consists of 4 Commissioned Officers, 2 Military Assistant Surgeons, 5 Civil Hospital Assistants and 4 Lady Doctors (one about to be posted). For Calcutta there is a hospital in the Maniktola suburb divided for the separate accommodation of different sects. Arrangements have been made to provide the hospital with a large staff of doctors (including lady doctors), subordinates and nurses should plague break out in Calcutta. Sites have been selected for three other hospitals of a similar nature.

In the North-Western Provinces temporary hospitals, with a division to separate the sexes, have been established at every Municipality and at the railway junctions of Manikpur, Moghal Sarai, Ghaziabad, and Tundla. For Europeans temporary structures for two inmates have been constructed at all head-quarters of districts and at Manikpur and Ghaziabad. The Lieutenant-Governor has recently ordered additional hospitals to be built, containing 50 beds in the large cities and about 30 in others, special provision being made for the privacy of females and families. Orders have also been issued for licensing private and caste hospitals. At present 11 Commissioned Officers, 9 Assistant Surgeons, 15 Hospital Assistants, and 6 women doctors and nurses are employed on duty connected with the prevention of plague.

In the Punjab the following temporary plague hospitals have been established: 59 at railway inspection stations, 2 at ferries where inspections take place and 2 at road inspection posts. The following is a list of the medical officers and subordinates who are employed on inspection duty and whose services would be available for the treatment of the sick should occasion arise: 27 Commissioned Officers, 12 Civil Assistant Surgeons, 40 Hospital Assistants, 1 Uncovenanted Medical Officer, 2 native doctors, 4 Military Assistant Surgeons, and 3 female Hospital Assistants.

In the Central Provinces there are special temporary plague hospitals at Nagpur and Itarsi and hospital accommodation for plague patients at Jubbulpore and Bilaspur. The plague medical staff consists of 2 Commissioned Officers, 4 Assistant Surgeons, 4 Hospital Assistants, and 2 female Hospital Assistants. Nurses are entertained at Nagpur and Itarsi as required.

In the Central India Agency hospital accommodation has been provided at Indore (in the Residency and City), at Rutlan and at Ujjain. The plague staff comprises 2 Commissioned Officers, 2 Medical Officers of the State, and 5 Hospital Assistants.

In Rajputana temporary plague hospitals have been established at twelve places. At Ajmere and Bandikui there are European medical officers and female assistants, and there are native subordinates at the other stations.

In Mysore temporary accommodation has been provided for plague patients in the City and at the inspection stations, and the Resident states that medical aid and female attendants can be supplied at once if the occasion should arise.

In the Hyderabad State also there is temporary plague accommodation at the inspection stations to which are attached male and female doctors and attendants. No plague hospitals have been constructed in the City or Residency, but it is stated that accommodation and medical aid and female attendants could be supplied immediately if required.

In Baluchistan temporary plague huts have been erected at several stations on the railway, and the medical officers employed in inspecting passengers are available for treating the sick. The principal inspection station (which is about to be removed from Sibi to Sharigh) is under the supervision of a Commissioned Medical Officer assisted by a Eurasian nurse.

We trust that the above recital of the measures adopted in the different Provinces for affording aid to the sick will show Your Lordship that this essential matter has everywhere been carefully borne in mind. Your Lordship is aware that the supply of lady doctors and female nurses in India is very limited, but we are of opinion that the number available suffices for the needs that have as yet been experienced.

9. In conclusion we forward a copy of Regulations* issued by Local Governments and Administrations under the Epidemic Diseases Act.

We have, &c.,
(Signed) ELGIN,
&c., &c.

Enclosures.

No. $\frac{311}{\text{XVI—404–B.}}$, dated the 1st May 1897.

From the Honourable W. H. L. Impey, I.C.S., Secretary to the Government of the North-Western Provinces and Oudh, to the Secretary to the Goverment of India, Home Department.

I am directed to submit for the information of His Excellency in Council the following report of the occurrence of bubonic plague at Hardwar and of the measures taken to circumscribe and eradicate the disease.

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* Not reprinted.

2. Since the commencement of the arrangements made to prevent the spread of bubonic plague into these Provinces special attention has been paid to the important centre of Hardwar. Pilgrims for that place have been subjected to examination at Saharanpur, at Lukhsar junction and again on their arrival at the Hardwar station. A Hospital Assistant, specially qualified from his knowledge of the language, dress and appearance of the people from the direction of Bombay and Karachi, has been employed at the Hardwar station to watch and examine pilgrims on their arrival there. Special precautions were taken in connection with the large religious gatherings occurring at Hardwar in the month of April. The first of these took place on the 2nd April. From the 26th March special arrangements were made for a minute and careful examination of all pilgrims at Pathri, two stations from Hardwar. On their arrival at that place all passengers were required to alight and were carefully inspected by a special medical staff deputed for the purpose. Persons coming from any of the suspected or infected localities of the Bombay Presidency were separated from the rest, and placed in special locked carriages at the end of the train.

3. On arrival at Hardwar, when the general body of passengers had been examined and permitted to pass, these people from suspected localities were registered and marched to Rorhi Island, where they were kept in a separate camp under observation. They were permitted to visit the temples and bathing-ghats, but required to sleep and cook their food at Rorhi Island, where they were examined every morning and evening. A special watchman was posted at each lodging-house in the town, and a constant inspection of these houses and patrol of the streets and bazaars, was carried on all over Hardwar, Kankhal and Jwalapur, by the subordinate medical staff. These precautions against plague seemed at first to have been effectual. No suspicious cases occurred in the camp at Rorhi Island, nor were any detected among the arrivals by train. The town of Hardwar appeared to be free from bubonic plague. A few cases of small-pox were discovered at the railway, and duly segregated and suitably treated in hospital. Two cases of suspicious nature were likewise segregated and placed under observation, but proved not to be cases of bubonic plague.

4. On the 8th April a dead body was discovered in a thatched shed near a dharamsala* in the town of Hardwar. The Sanitary Commissioner and the Civil Surgeon immediately proceeded to the place, and found that the corpse was that of a woman recently dead, and presenting enlarged glands. She and her husband were residents of Hardwar. The husband, who was found with the corpse, stated that they had for two days been living in the shed where the woman died. Before that they had lived in the house of a Panda's agent, whose mother was sick. This Panda carried on the business of accommodating and looking after Scindi pilgrims. The glands of the deceased woman was sent for bacteriological examination, and were subsequently pronounced to be swarming with bacilli, exactly like those of the bubonic plague.

5. On examining the Panda's house, where the deceased woman and her husband had resided, the agent's mother was discovered evidently recovering from a recent and serious illness, with a suppurating bubo in each groin. She had been ill, it was said, for about a month, and suffered from high fever, which had abated about 15 days previously. The glandular excretion of this case was also sent for examination, but, as might be expected under the circumstances, no specific result was obtained. The circumstances led the Sanitary Commissioner to suspect that a fœcus of disease had been existing for some time in Hardwar. Accordingly a house-to-house examination was instituted, beginning from the locality in which the above cases had occurred, and working through Hardwar, Kankhal and Jwalapur, composing the Hardwar Municipal Union. This scrutiny brought to light three cases. First, a man who had died just before the arrival of the inspecting party. The body was examined and found to have enlarged glands. Second, the wife of a basket-maker, who was found with high fever and enlarged glands. She was removed to hospital and died six days later with well-marked symptoms of bubonic plague. Bacteriological examination disclosed the presence of characteristic plague bacilli. Third, a female child, aged 10 years, ill for about six weeks, displaying fever and glandular swellings. She died the same day. This also appeared a clear case of bubonic plague, although the bacteriological examination disclosed no specific result. All these persons were old residents of the place ; no case came to light after this till the 15th.

6 On the 15th April a man died suddenly in a house, two doors from one of the previous cases. He suffered from fever of six hours' duration, and displayed enlarged glands. On the 18th April a case occurred in quite another part of the town, showing

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* Relief-house, or poor-house.

very marked symptoms of plague, unusually large bubos and a temperature of 109 degrees. This man was placed under treatment and died in 36 hours. No very direct connection was traceable with the other cases, but the man had two days before been employed in cooking cakes at a place in the infected area. On the 22nd, another case was detected in a large dharamsala, known as Nanakbara. This was a Sadhu lad of about 20. He showed slightly enlarged glands and a temperature of 102 degrees. At the request of the Sanitary Commissioner, he was seen by the mahant of the dharamsala and a well-known hakim, then resident in the dharamsala, who gave it as his opinion that the case was of ordinary fever. The mohaut* and the hakim were then requested themselves to take charge of the case in the isolation shed. They did so, and continued to attend him themselves. The glands became greatly enlarged, the temperature rose, and the patient died on the evening of the second day. The mahant and the hakim then expressed their conviction that it was a genuine case of plague. Since the 2. nd no case has occurred which arouses suspicion of being genuine bubonic plague.

7. The locality in which all these cases but one occurred is a mohulla fairly detached from the main body of the Hardwar town, and capable of being isolated. It consists of several blocks of houses and buildings, containing a population of perhaps 200 or 300 persons.

8. The circumstances above set forth leave no doubt whatever that a centre of true bubonic plague has been established in this mohulla,† and the cases which have occurred are so distributed over the mohulla as to demonstrate the necessity of dealing with the mohulla as a whole. It is most essential that steps should be taken to eradicate the plague on its first appearance here, because, as the Government of India knows, Hardwar is a centre in which pilgrims from all parts congregate.

9. The searching measures already taken to prevent the introduction of the disease have proved insufficient. It is probable that the first seeds of the plague were introduced from Bombay, before the promulgation of the rules or the adoption of precautions under the Epidemic Diseases Act, and that the disease may have been latent some time in Hardwar, ready to break out when the conditions became suitable for its development.

10. Two gatherings of some importance will occur in Hardwar at the end of May and the beginning of June. The absolute prohibition of these would cause inconvenience and discontent among the Hindu community; but if any trace of the plague is found lingering in Hardwar, such a step will be inevitable. It is therefore on every ground obviously necessary to adopt thorough and effective means to avert the danger with which this centre of pilgrimage is threatened.

11. The Lieutenant-Governor held a conference with the local officers and the Sanitary Commissioner at Saharanpur on the 27th instant, and having made himself acquainted with their views and the facts of the case, he visited Hardwar on the 28th. The leading representatives of the various interests, religious and secular, were invited to meet His Honour and given the fullest opportunity of expressing their views and wishes.

12. The measures finally adopted were embodied in rules, which are appended to this letter, and which sufficiently explain the action which it has been found necessary to take. From the telegram copied in margin, dated 29th instant, from the Collector of Saharanpur, it will be seen that the evacuation of the mohulla has been successfully accomplished. A camp for the accommodation of the people had been previously prepared.

Copy of a telegram, dated 29th April 1897, from the Collector of Saharanpur to the Private Secretary to His Honour the Lieutenant-Governor, North-Western Provinces and Oudh.

Evacuation of infected area practically completed without resort to pressure: no opposition: a few isolated cases of objections personally settled on spot by slight concessions. No fresh cases.

13. You have also been addressed by the telegram on the 29th instant with the object of preventing the collection at Hardwar of labourers on the Hardwar-Dehra railway line, till it is clear that the place is free from infection.

It having been ascertained that bubonic plague exists in Hardwar, the following measures are prescribed under the Epidemic Diseases Act (III of 1897) for the purpose of eradicating it. These rules shall remain in force until the town is declared to be free from infection. They are supplementary to those issued with Notification No. $\frac{211}{\text{XVI—404-B.}}$ dated 26th March 1897, and apply—

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* Mohaut = head-priest; hakim = medical man.

† Mohulla = section or ward of the town.

(1) to the infected areas ;
(2) to visitors and pilgrims to Hardwar coming from infected areas.

1.—*Measures concerning the infected area.*

1. The infected areas shall be placed in quarantine.

2. The inhabitants of the specially infected block adjacent to Ramghat shall remove to the camp established at Chauk Ram Jas on the Jwalapur road. Any person wishing to leave the camp shall, before leaving, obtain a written permission to do so from the Health Officer or Magistrate. Information of the departure of such persons shall be sent to the Magistrates of districts to which they are proceeding. Provision for the watch and ward of the evacuated quarter and for the custody of the property of persons who have removed from it shall be made in accordance with rule 39 of Notification No. $\frac{211}{\text{XVI—404-B.}}$ of the 27th March 1897.

N.B.—The accommodation in this camp has been provided with due regard to the convenience of families and the privacy of females.

3. Inhabitants of the Ramghat block who do not wish to leave Hardwar shall reside in the camp for one month, or until the Ramghat block is declared to be safe for re-occupation.

4. Residents in the camp shall be liable to medical examination daily, females being inspected by female medical officers.

5. Residents in the camp shall be permitted during the day to visit all parts of Hardwar other than the areas declared to be infected, but should cook their meals and sleep in the camp.

6. After the evacuation of the Ramghat block, the houses, etc., shall be thoroughly cleansed and disinfected, the owners and occupiers being allowed to be present at the time.

7. Facilities shall be given in the camp for persons to open shops and carry on their trades, so far as they may be consistent with the object of these rules.

8. Hospitals and segregation huts for the accommodation and reception of persons suffering from plague and for their friends and attendants shall be provided in accordance with Government order No. $\frac{231}{\text{XVI—404-B—283}}$ of 5th April 1897.

9. Free access shall be given in the camp and hospitals to Baids, Hakims, Pandas, and religious instructors, who shall be free to treat and communicate with those who desire to consult them.

2.—*Measures regarding visitors and pilgrims coming to Hardwar from infected areas.*

10. All pilgrims and visitors from the Bombay Presidency and Sind, or other place infected with plague, coming to Hardwar by rail or road, shall reside in the camp at Hardwar provided for the purpose where provision has been made for their accommodation. They shall be permitted during the day to visit the non-infected portions of the town, shrines and bathing ghâts, but must cook their food and sleep in the camp at night. Such visitors shall be liable to medical inspection from time to time.

No. 321, dated 5th May 1897.

From the Honourable W. H. L. Impey, I.C.S., Secretary to the Government of the North-Western Provinces and Oudh, to the Secretary to the Government of India, Home Department.

In continuation of my letter No. $\frac{171}{\text{XVI—404-B.}}$, dated 16th March 1897, I am directed to say that the disease (mahamari) appears to have died out of the locality. At the commencement of the attack a few Doms voluntarily left the village, which is very small, remote and inaccessible, and thus escaped infection. Only four or five families remained, most of the members of which have been carried off by the disease. There were 17 deaths in all. As soon as information was obtained by the authorities, those who had not left the village were removed from it; the houses, with the consent of the owner of the village, have since been burnt, and orders have been issued that the site, which is water-logged and in an insanitary condition, should not be re-occupied. I am to add that the neighbouring villages have been thoroughly cleaned, and that it is hoped that the spread of infection has been prevented. His Honour, however, does not consider it safe to re-open the direct road of pilgrimage to Kedarnath until in the opinion of the sanitary authorities all danger of infection has disappeared. On this point inquiries are being made.

TELEGRAM Nos. 1252 to 1263, dated Simla, 12th April 1897.

From the Secretary to the Government of India, Home Department, to the Secretary to the Government of Bombay. The Secretary to the Government of Madras. The Secretary to the Government of Bengal. The Secretary to the Government of the North-Western Provinces and Oudh. The Secretary to the Government of the Punjab. The Secretary to the Chief Commissioner of the Central Provinces. The Secretary to the Chief Commissioner of Burma. The Agent to the Governor General in Rajputana. The Agent to the Governor General in Baluchistan. The Agent to the Governor General in Central India. The Resident at Mysore. The Resident at Hyderabad.

In a despatch regarding plague, Secretary of State asks for information to make it clear that sufficient temporary hospitals with adequate staff doctors and nurses were promptly established at each plague centre, and that where available women doctors were employed in plague wards for women. Government of India are aware that temporary hospitals have been erected at stations where medical inspection is carried out, and that at other places hospitals have been arranged for in case plague should occur, but the information which they have is not sufficiently definite to place before the Secretary of State. They would therefore be obliged if complete information can be given by telegram giving details as to special or temporary plague hospitals, number of Medical Officers, Assistant Surgeons, Hospital Assistants, women doctors and nurses detailed for plague duty. Please telegraph complete information on subject. Information should contain complete list special and temporary plague hospitals with staff both at plague centres and inspection stations. Also number of medical officers of each class and nurses employed on plague duty and where employed. Also required information about women doctors.

TELEGRAM No. 3686, dated 13th April 1897.

From the Agent to the Governor-General, Central India, Indore, to the Secretary to the Government of India, Home Department.

Your telegram of 12th April. There is no plague centre in Central India Agency, except Khandroani in Gwalior territory, regarding which daily reports reach you. No other cases of plague have occurred, except at Ujjain, and those were all imported cases. The following are the arrangements at the inspecting stations of Rutlam, Ujjain, and Indore: at Rutlam—Surgeon-Major Kanga, I.M.S., and Hospital Assistant Mahomed Yassin. Huts for segregation of plague patients have been erected there. A female Hospital Assistant has not yet been found, though the employment of one has been sanctioned. At Ujjain—Surgeon-Captain Hardy has under him Hospital Assistants Sheonarain and Joglekar. There is no female attendant. All arrangements for segregation and treatment are complete. At Indore—Hospital Assistants Sheopershad and Hadi Hosein with two of Maharaja Holkar's Medical Officers inspect all trains. There are arrangements for segregation and treatment both in the Residency and in the city.

TELEGRAM, dated 13th April 1897.

From the Secretary to the Government of Bengal, Financial Department, to the Secretary to the Government of India, Home Department.

Your telegram of 12th. There are temporary plague hospitals at Khana on East Indian Railway, Katihar and Damukdia on Eastern Bengal State Railway, and at

Maniktola near Calcutta. The staff employed is the following: Khana—3 Commissioned Medical Officers, 1 Military Assistant Surgeon, 2 Lady Doctors, and 4 Civil Hospital Assistants; Katihar—1 Commissioned Medical Officer, 1 Lady Doctor, and 1 Civil Hospital Assistant; Damukdia—1 Military Assistant Surgeon and a Lady Doctor, who will be posted there shortly. Maniktola is under Health Officer, Calcutta, who has been asked for particulars of staff, but has not replied. Information will follow.

TELEGRAM, dated 13th April 1897.

From the Secretary to the Chief Commissioner of Burma, Rangoon, to the Secretary to the Government of India, Home Department.

Yours of 12th. There is no medical inspection in Burma, except of vessels from infected ports, Bombay, Karachi, Goa under quarantine rules, and of vessels from other ports under ordinary rules. A flat has been provided at Rangoon for use of plague hospital and arrangements made to supply other flat if necessary. Site has been selected for segregation camp if required at Bassein. Temporary building has been erected at Akyab. Site has been selected at Moulmein. Flat will be used. No medical officers or nurses yet detailed for plague duty.

TELEGRAM, dated 14th April 1897.

From the Government of Bengal to the Secretary to the Government of India, Home Department.

In continuation my telegram yesterday. Maniktola Plague Hospital is subdivided for Hindus, Mahomedans, Christians, and according to sects attached to it are observation and rest camps. The present staff is 1 Medical Officer, 1 Compounder, 2 Hospital Assistants and menials. There are no patients at present. If plague breaks out, staff will be raised to 2 Medical Officers, 2 Lady Doctors, 12 Trained Nurses, 24 Hospital Assistants, besides menials. Sites have been selected for 3 other hospitals on similar lines.

TELEGRAM No. 1465-G., dated 15th April 1897.

From the Agent to the Governor General, Rajputana, Abu, to the Secretary to the Government of India, Home Department.

Your telegram dated 12th. Temporary plague hospitals at Abu Road, Nana, Marwar Junction, Jodhpore, Bikanir, Ajmere, Nasirabad, Jeypore, Bandikui, Bhurtpore, Dholpore, and Ulwar. Special plague European Medical Officers and nurse Ajmere. European Medical Officer and Female Hospital Assistant Bandikui. Special plague Hospital Assistants Abu Road, Nana, Marwar Junction, Bikanir, and Chitor. Local Assistant Surgeon plague duty Jeypore, Apothecaries Abu Road, Phalera, and local Hospital Assistants Erinpura, Jodhpore, Beawar, Bhurtpore, Dholpore, Ulwar, Bhilwara, Tonk, Deoli, Bundi, Kotah, Jhalrapatan. At Nasirabad local Medical Officer.

TELEGRAM, dated the 15th April 1897.

From the Government of the North-Western Provinces and Oudh to the Secretary to the Government of India, Home Department.

Your telegram 13th. In these provinces, excluding Mahamari, 20 cases of plague in all have been reported from ten districts, of which five only were treated in hospital; remainder died in trains or villages before medical relief was possible, case not being known till after death. We have no plague centres at present, but for use, in case of necessity, temporary hospitals have been constructed as follows:—For natives, temporary structures, with division to separate the sexes, for four inmates at every municipality and at railway junctions of Manikpur, Moghal Sarai, Ghaziabad, and Tundla. For Europeans, temporary structures for two inmates at all head-quarters of districts and at Manikpur and Ghaziabad. His Honour has recently ordered additional hospitals to be built, containing

56 beds in the large cities and from 30 to 32 in others, special provision being made for the privacy of females and families. Orders have been issued for licensing private or caste hospitals. Hospital accommodation can be extended readily to meet wants, should they arise. At present 11 Medical Officers, 9 Assistant Surgeons, 15 Hospital Assistants, 6 Women Doctors and nurses have been detailed for plague duty.

TELEGRAM No. 178, dated 15th April 1897.

From the Agent to the Governor General, Baluchistan, Quetta, to the Secretary to the Government of India, Home Department.

Your telegram 12th instant. Temporary plague huts have been erected at Quetta, Sharigh, Hirok, Bostan, and Chaman for accommodation of plague patients discovered in train at medical inspection. These huts and the medical inspections are under Assistant Surgeons at Sharigh and Hirok and under Hospital Assistants at other places. No special establishment engaged, as none has yet been necessary, and the Assistant Surgeons and Hospital Assistants are the men always stationed at the places named and are not specially detailed for plague duty. In Quetta, Special Sanitary Committee has been nominated from the Cantonment and Municipal Committees, who are now arranging sites for plague hospital and segregation camp, and concerting other measures necessary in case of plague appearing at Sibi, where there is strict medical inspection and detention for some days of plague suspects. Medical inspection is in special charge of Surgeon-Captain Browning, detailed for plague duty, assisted by an Eurasian nurse specially employed by Municipality. Plague huts have been erected, but no case has yet appeared.

TELEGRAM No. 470, dated 17th April 1897.

From the Junior Secretary to the Government of the Punjab to the Secretary to the Government of India, Home Department.

Your telegram of 12th. Following temporary plague hospitals have been established. At railway stations 59, ferries 2, and 2 road posts. Following persons detailed for inspection duty: Commissioned Medical Officers 27, Civil Assistant Surgeons 12, Hospital Assistants 40, Uncovenanted Medical Officer 1, Native Doctors 2, Military Assistant Surgeons 4, Female Hospital Assistants 3; total 89. More female practitioners would probably be entertained if forthcoming. There is no plague in the Punjab at present, but all inspecting medical officers may be regarded as attached to the temporary hospitals at their places of inspection and would be on plague duty at those places if plague broke out.

TELEGRAM, dated 23rd April 1897.

From the Secretary to the Government of Madras, Local and Municipal Department, to the Secretary to the Government of India, Home Department.

Your telegram 12th. No plague centres this Presidency, and so far temporary hospital and segregation accommodation provided only at railway inspection stations. At Guntakal, Perambur, Arkonam, Kondapalli, and also at Tuticorin and Madras City. Medical staff on plague duty consists of:—3 Commissioned Medical Officers, 3 Assistant Surgeons, 2 Civil Apothecaries, 15 Hospital Assistants, and only 1 female medical practitioner at Tuticorin; but trained nurses are being deputed to other stations. This staff is in addition to Medical Officers and subordinates at seaports, who have been gazetted Port Health Officers under plague quarantine rules.

TELEGRAM No. 43-C., dated 23rd April 1897.

From the Chief Commissioner, Central Provinces, to the Secretary to the Government of India, Home Department.

Your wire No. 1257 of 12th and reminder No. 1344, dated 20th. Two special temporary plague hospitals at Nagpur and Itarsi. At former 1 Commissioned Medical Officer, 1 Assistant Surgeon, 2 Male and 1 Female Hospital Assistants. At latter

1 Medical Officer, 1 Assistant Surgeon, 1 Female Hospital Assistant. At both nurses entertained as required. Also temporary hospital accommodation at Jubbulpore and Bilaspur, and 1 Assistant Surgeon to inspect at each. Also at Khandwa and Bina 1 Hospital Assistant for inspection and emergencies.

TELEGRAM No. 4, dated 23rd April 1897.

From the Resident at Mysore, Ootacamund, to the Secretary to the Government of India, Home Department.

Your telegram, dated 12th. No plague cases have reached so far south as Mysore, and action up to date has been practically confined to inspection work in the Mysore State. No special staff has been detailed for plague duty, the idea being that the officials carrying on the inspection work could afford relief in an emergency until the occurrence of fresh cases rendered it necessary to organize a complete hospital staff. There are inspection stations at Harihar and Yaswantpur outside Bangalore on the Southern Maharatta Railway. At each of these places, where all trains from the north are examined, there are a Hospital Assistant, midwife, cook, bhisty, and ward cooly, and sheds to accommodate 6 patients. There are also sheds at 4 other stations on this railway, which are in charge of the Hospital Assistant of the adjoining dispensary should cases occur. The necessary staff, male and female, could be at once either sent from Bangalore by train or taken from dispensaries in the neighbourhood should the necessity arise. The Senior Surgeon, Mysore State, is fully alive to the desirability of having female attendants for women sufferers. In most cases, however, the only attendants available would be Hospital Assistants for men and midwives or females on the vaccinating establishment for women. At Bangalore Cantonment the inspection arrangements are in charge of the Residency Surgeon; he is assisted by the Municipality male and female medical subordinates. Here also our endeavours are entirely protective. Temporary sheds have been provided for plague cases, and the necessary hospital establishment of male and female attendants could be provided at two hours' notice. The inspection arrangements are, I believe, thorough and all Medical Officers agree that they comprise all that is necessary. At present all local notifications under the Epidemic Diseases Act have been adopted by the Mysore Durbar, and district officials have ample powers thereunder to deal with any outbreak of plague in the interior of the State.

TELEGRAM No. 122, dated 23rd April 1897.

From the Resident at Hyderabad, Deccan, to the Secretary to the Government of India, Home Department.

Your telegram 12th instant, regarding plague arrangements in Hyderabad State. There are temporary plague hospitals at five railway stations—Gulburga, Wadi, Raichur, Vikarabad, Hyderabad, where passengers are inspected. Gulburga has one male and one female doctor and one Hospital Assistant. Wadi two male and one female doctors and three Hospital Assistants. Raichur one male doctor and one Hospital Assistant. Vikarabad, ditto. Hyderabad two male and one female doctors and one Hospital Assistant. In Hyderabad city and suburbs no plague hospitals constructed and no medical staff specially detailed to plague duty, but standing preparation against ordinary epidemic capable of prompt amplification if plague occurred. Sufficient female medical attendance available for Residency Bazaars, Secunderabad and Hyderabad contingent stations. No hospitals or other arrangements so far required. Rules under the Epidemic Diseases Act only issued on 10th instant for these areas and Berar. In Berar temporary hospitals established at nine inspecting railway stations—Malkapore, Nandura, Khamgaon, Shegaon, Akola, Murtizapur, Badnera, Amraoti, Chandur, where local Hospital Assistant inspects passengers. No special female agency detailed to this duty, but at Amraoti the Dufferin Hospital lady doctor available and Dufferin nurses at other municipal towns. There is no plague centre under this administration.

TELEGRAM No. M. 295-P., dated 6th May 1897.

From the Secretary to the Government of Bombay, General Department, Mahableshwar, to the Secretary to the Government of India, Home Department.

Your telegram 1252, 12th April. In Bombay city there are 3 large plague hospitals, 11 Government temporary hospitals, and 27 private community hospitals, all with sufficient medical staff. Also Bombay divided into 10 districts each with medical staff and 6 with special lady doctors, omitting subordinates. Medical staff consists of 14 commissioned officers, 2 merchant service men, 29 native doctors, 12 nurses from England, 18 nurses engaged in India, 18 Roman Catholic sisters, 4 Protestant sisters. In Poona city there are 3 large plague hospitals with medical staff and the Sassoon Hospital ordinary nursing staff; also 3 nurses from England. In Karachi plague hospital—2 commissioned officers, 4 subordinates, 4 Roman Catholic sisters, 1 lay sister, and 3 Zenana Mission ladies, 2 paid nurses, Convalescent Hospital under same doctors; also 1 lady doctor and 1 paid nurse. Another hospital—1 commissioned officer and subordinates, 1 paid nurse. Three temporary hospitals under subordinates, but visited by commissioned and lady doctors; also 2 Government temporary hospitals under paid private doctors; also several temporary private hospitals for different communities superintended by commissioned officers. At Hyderabad plague hospital under Civil Surgeon, numerous subordinates, 4 European and 4 native women nurses. Hindu private hospital with considerable subordinate staff supervised by Civil Surgeon, 3 European nurses and Zenana Mission ladies. In Sukkur—2 hospitals, 2 commissioned officers with subordinates, 3 nursing sisters, 2 trained nurses, 3 probationers, 1 lady doctor, and Zenana Mission ladies. Extensive arrangements for railway inspection. In Presidency proper—9 commissioned officers and 4 private doctors and 74 subordinates at principal inspection stations, but no lady doctors in Sind. At each inspection place a commissioned officer assisted, where possible, by a lady doctor or experienced female. In Mofussil generally plague hospitals are run on lines of civil hospitals. Further information will be furnished as collected.

From the GOVERNMENT OF INDIA to the SECRETARY OF STATE FOR INDIA.

(Sanitary No. 16.)

MY LORD, Simla, 1st June 1897.

IN continuation of our Sanitary Despatch No. 15, dated the 12th May 1897, we have the honour to forward a further narrative of events connected with the plague.

2. We are glad to be able to report a large decrease in the number of cases in almost all parts of the Bombay Presidency and Sind. In the Presidency proper the plague lingers in Bombay and Poona, in the districts of Kolaba, Surat and Thana, and in the Baroda territory, but in all these places it has become less virulent and less widely diffused. It was stated in our Despatch of the 12th May that during the week ending the 10th May the average daily numbers of plague seizures and deaths in the City of Bombay were 23 and 15, respectively, and that the average daily mortality from all causes during the same period was 83. During the period 11th to 28th May the average daily number of seizures and deaths has been only 11 and 8, whilst the average daily mortality from all causes has been 76. This last figure compares with an average of 80 for the period of the five years 1892-96 corresponding to the fortnight ending the 25th May 1897. The total mortality in Bombay has thus been below the average. The returns are doubtless to some extent affected by the fact that the population is still below its normal figure, but we have noticed a decline in the number of deaths from ordinary fevers greater than can be accounted for by this cause, and we have asked the Government of Bombay if the reason for it can be ascertained.

The following figures compare the average number of daily seizures in Poona, Kolaba, Surat and Thana for the period 11th to 28th May with the average number during the worst week of the epidemic in each of those places:

	11th to 28th May.	Worst week of the Epidemic.
Poona	3	51
Kolaba	15	28
Surat	4	41
Thana	9	58

In Baroda territory the malady now lingers only in a few places in the Naosari Division, and the average number of seizures during the period 11th to 28th May has been only three a day. A copy of the report by the Political Agent, describing the means successfully adopted by the Durbar to check the malady, is appended to this Despatch.

3. Plague continues to be severe in Mandvi in the Cutch State, but the number of seizures has decreased from about one hundred to about fifty a day. It still gives trouble in Damán in Portuguese territory. The Government of Bombay have been asked for a detailed account of the measures that are being pursued to suppress the outbreak in Mandvi, and to ascertain the extent to which the malady has become diffused in the surrounding country. Stringent measures of observation and disinfection have been adopted both in Bombay and in Karachi, to prevent infection being brought from Cutch. With regard to Damán, we forward for your Lordship's information a copy of correspondence with the Government of Bombay, on the subject of the cordon placed round the boundary of the Portuguese territory, with a view to its isolation.* The strict quarantine thus enforced is opposed to the principles which have guided us in prescribing measures to prevent the spread of the plague, and we consider that the British territory bordering on Damán can be protected by measures imposing less hardship on the inhabitants of that place.

4. The reports in Sind are most satisfactory, except from the district of Shikarpur. In our last Despatch, we stated that during the six days ending the 9th May, the average daily number of seizures and deaths in Karachi had fallen to 10 and 9 respectively. During the following week, the figures were 7 and 5, and during the 11 days ending the 27th May, 6 and 3. From the 11th to the 28th May, only 10 cases were reported from Sukkur, 18 from the Hyderabad district, and 6 from the Karachi district. Two or three indigenous cases continue to occur daily in the Shikarpur district, mostly in the town of Rohri (population about 10,000) on the Indus. These cases cause some anxiety owing to their being in the neighbourhood of the main line of communication and near the Punjab border. The conduct of the measures taken to suppress the disease in Rohri is in the hands of the Sukkur Plague Committee. We have inquired from the Government of Bombay what arrangements have been made for cleansing Rohri, for evacuating the infected quarters of the place, and for segregating and treating the sick, but have not as yet received information on these points. The local authorities have issued orders closing railway traffic from Shikarpur to Reti, near the Sind frontier, to all who are not provided with sanitary passes. We consider this an unnecessarily stringent interference with communication, and we have suggested that all suspected persons should be detained at Rohri itself under proper observation, the Indus crossing being guarded on the Shikarpur side. The correspondence on this subject is enclosed.*

5. In paragraph 6 of our Despatch of the 12th May it was stated that no case of plague had occurred at Hardwár since the case of the 22nd April. The place remained free from plague up to the 16th May, since when three isolated cases have occurred. The last of those cases ended fatally on the 21st May. A description of the cases is given in the letter of the Government of the North-Western Provinces and Oudh of the 25th May, which forms an enclosure of this Despatch.* In all three cases the prescribed precautions were taken with reference to the segregation of relatives and the disinfection of houses, &c. Up to the date of the North-Western Provinces Government report no cases had occurred among the segregated friends and relatives, nor had any further case been reported since the 18th May. The infected quarter has now been thoroughly disinfected and none of the persons living in it as caretakers have been attacked with plague. The Lieutenant-Governor has decided that all pilgrims who visit Hardwár up to the 12th June are to reside in a camp set apart for the purpose on the outskirt of the town.

6. Surgeon-Major Crofts, the Medical Officer of His Highness the Maharaja of Gwalior, who was in charge of the operations for suppressing the outbreak of plague which occurred in the village of Khandraoni in the Gwalior State, in January to March last, has submitted a very interesting report on the outbreak, and on the measures successfully adopted to suppress it, and to prevent the spread of inspection. A copy of this report is forwarded for your Lordship's information. It shows how completely the malady can be suppressed by removing the inhabitants from the infected locality, and detaining them under carefully supervised sanitary conditions in a healthy place; the sick and the suspected being completely cut off from intercourse with the healthy. Measures as elaborate as

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* Not reprinted.

those which were carried out by Dr. Crofts could, however, only be adopted over a small isolated area.

7. We have received your Lordship's telegram of the 25th instant, stating that you have approved the Convention framed at the recent Sanitary Conference held at Venice, and have agreed to its ratification. It appears to us that this country has reason to be satisfied with the results of the Conference. We have forwarded a copy of the Convention to the Maritime Local Governments with a letter explaining its terms and instructing the Local Governments to modify their rules with regard to the inspection of vessels at the time of departure and with regard to the protective measure adopted against infected ports, in accordance with the regulations prescribed by the Convention. A copy of our Circular is appended to this Despatch.*

8. In conclusion we forward, for your Lordship's information, a copy of Regulations* issued by Local Governments and Administrations under the Epidemic Diseases Act, and some of the more important orders recently issued by the Government of Bombay.

We have, &c.,
(Signed) ELGIN,
&c., &c.

Enclosures.

No. 6783, dated Baroda, 12th May 1897.

From Lieutenant-Colonel N. C. Martelli, Agent to the Governor-General at Baroda, to the Secretary to the Government of India, Home Department.

In continuation of my telegram, No. 6245, dated the 5th inst., to the Foreign Department (copy enclosed for ready reference, I beg to submit the following report on the measures adopted in the territory of His Highness the Gaekwar in view to preventing the spread of bubonic plague.

2. The first case of plague in Baroda territory occurred in the town of Nowsari on the 1st October 1896, and from that date the Darbar were asked to submit daily reports of cases occurring within their jurisdiction. I append a statement showing the total number of cases which have occurred in Baroda territory up to the 3rd inst.* By the end of the year the danger of the epidemic spreading outwards from Bombay became apparent, and I at once addressed the Minister, asking him to furnish me with a report as to what was being done in this matter. This officer promptly responded to my call, and I beg to enclose, for the information of the Government of India, a copy of his letter, No. 4374, dated the 22nd January last.* The Baroda State being geographically situated in the midst of the Bombay Presidency, the Government of Bombay were communicated with, and apparently they were satisfied with the arrangements made by the Darbar. My assistants at Amreli and Okhamandal were also warned to see that the sanitary measures ordered were fully carried out by the local officials. I myself visited Okhamandal in January last, and, in the following month, parts of the Baroda Division. I then found no reason to think that the Darbar were failing in their duty in this respect; in fact from what I saw I was impressed that they were fully alive to their responsibility in this important matter.

3. With these general observations, I proceed to describe in detail what steps were taken by His Highness the Gaekwar to prevent the spread of the disease.

4. As soon as it became known that bubonic plague had established itself in Bombay, the subhas† of the four divisions were directed by special orders to take vigorous preventive measures and to improve the sanitation of Kasba‡ towns and villages. Medical officers at the several taluka towns were directed to furnish immediate information of the occurrence of plague cases to the Chief Medical Officer at the capital. On the receipt of the report of the first imported case in Nowsari, in the beginning of October last, the subha was instructed, by telegram, to arrange for the removal of plague patients to a separate hospital and for the segregation of persons who had come in contact with them, and to take measures for cleansing and disinfecting the town. The Municipal Commissioner of the Baroda City was also furnished with similar instructions.

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* Not reprinted.

† Subha=Chief administrative officer.

‡ Kasba=Central town of the subdivision.

5. The Chief Medical Officer of the State was ordered on the 13th January last to proceed at once to Nowsari and to see that the arrangements made there were satisfactory and complete. A large and commodious *serai* at Nowsari was converted into a plague hospital, and sheds were constructed, at some distance, for plague-stricken persons arriving from out-stations. The same arrangements were also made at Billimora.

6. Further, the divisional subhas were instructed to cause temporary sheds to be constructed at the principal railway stations on the line running through their charges. Sheds, as per margin, were accordingly erected at a cost ranging from Rs. 500 to Rs. 1,200. Independently of these, there were quarters provided for the segregation of healthy persons removed from infected houses. The Medical Department was directed to depute medical men to look for and remove to hospital plague-stricken passengers arriving by rail from infected areas.

Baroda Division, 3.
Kadi Division, 9.
Nowsari Division, 6.
Amreli Division, 6.

7. The Minister of the Baroda State has personally undertaken the direction of all the arrangements regarding plague, and is assisted in this work by a qualified medical officer, who is reported to have gained experience in sanitary matters while employed as Health Officer under the Poona Municipality.

8. Inspecting officers have been appointed to enforce segregation, disinfection, &c. Quarantine rules for the Baroda ports on the Kathiawar coast were passed on the 18th February last. Detailed instructions were issued on the 8th ultimo for the detection of plague cases, for the removal of patients to sheds, for the removal and segregation of persons living in infected houses, and for the disposal of the bodies of persons dying of the plague. From time to time extended powers have been vested in plague officers to enable them to take effectual preventive measures.

9. The subha of Nowsari has, by timely and stringent measures, succeeded in preventing plague from taking root in the town of Nowsari. This town, being in close intercourse with Bombay, is open to the danger of catching the plague infection from that city. The measures adopted at this station are as follows :—

> A strict watch is kept at the railway station to detect plague cases coming from infected parts of the Bombay Presidency. All arrivals are subjected to a process of fumigation and their dirty clothing is disinfected and boiled before they are allowed to enter the town. The town has been thoroughly cleansed. The old dirty "well privies" have been done away with from a greater portion of the town, and proper latrines provided in their place. Better conservancy arrangements have been sanctioned.

10. No efforts are spared to stamp out the scourge from Gandevi, Billimora, and Dhamdachha in the Nowsari Division, where it had assumed some proportions. At Gandevi the inmates of infected houses were removed therefrom and placed in temporary sheds erected outside the town in open fields under shade of trees. About 3,000 persons are now in camp. These persons are not allowed to absent themselves from their camp or go to adjoining villages. The affected houses are thoroughly fumigated, limewashed and partially unroofed for ventilation; the floor of the houses is also dug up. The more insanitary houses, which it is found impossible to disinfect, are demolished and burnt. New roads have been opened for perflation of air through the Kasba. The town is being thoroughly cleared of all rubbish and filth. The clothes of the affected are burnt and those of the non-affected are disinfected by immersing and keeping them in boiling water. Large bonfires are now and then kindled in all parts of the town and kept up for hours to destroy the plague germs. The segregation of the affected, as well as of those who come in contact with them, is strictly enforced. House-to-house visitation is daily carried on by the local Medical, Municipal, and Police officials. There are in all five medical men and one nurse on duty at Gandevi.

11. Similar measures are in force at Billimora and Dhamdachha. The number of medical men posted at Billimora on plague duty is four and at Dhamdachha (a small village) one.

12. The Deputy Sanitary Commissioner and special plague duty officer frequently visits affected places and advises the course of the action to be taken by the local authorities.

13. Owing to the pestilence raging at Mandvi (Cutch), which is in close proximity to Okhamandal (Baroda), quarantine for ten days has been imposed on all arrivals from that quarter at Beyt, Dwarka and other Baroda ports in the Kathiawar peninsular, and all arrangements in this regard are carefully carried out by the subha of the Amreli Division.

14. The Darbar Chief Medical Officer is now on tour in Kathiawar inspecting plague sheds and camps of observation, and to see that the rules for segregation and disinfection are properly attended to. On the occurrence of plague cases in the city of Baroda, the Minister appointed 22 committees for the city, each consisting of two State officers, two gentlemen of known respectability from the town, and one member of the Municipal Corporation, for house-to-house visitation, for detection of plague cases and for enforcing cleanliness in all directions. The committees are required—

1st—to inspect each house in their beat and point out such of them as are filthy to the Municipal officer in view to his attending to their cleanliness ;

2nd—to detect persons suffering from plague and assist State officers in segregating such persons ;

3rd—to explain to the people the necessity of adopting measures for preventing the outbreak of the epidemic by cleaning their houses and limewashing them, and to see that these instructions are properly carried out ;

4th—to bring to the notice of the Darbar any abuse of powers by Municipal and other servants deputed in this behalf.

15. The committees go round their beats daily, and send their reports to the Secretary,* who, after bringing them to the notice of the Minister, forwards them to the Municipality for action and report.

16. This arrangement seems to work well. Places have been selected in the different parts of the city for the segregation of the affected as well as of the healthy who come in contact with the former, and in this work the leader of different communities in Baroda have willingly co-operated.

17. In the Baroda city there are on plague duty—

1 Medical Supervising Officer,
10 Medical Inspecting Officers,
1 Medical Officer for treatment of patients in the sheds, and
2 Medical men to perform inoculation with Dr. Haffkine's lymph.

18. For looking after the sanitation of the city, a medical graduate of the London University, who holds a public health diploma, has been appointed Health Officer of the city.

19. Conservancy establishment has been considerably increased, and steps have been taken to burn filthy and insanitary houses, where cases of plague have occurred, after payment of compensation. Large quantities of disinfectants, such as phenyle, carbolic acid, tar, sulphur, chloronitrozone, etc., are freely used, and finally the drainage scheme designed by Mr. Baldwin Latham is being carried out.

20. In view to ascertainment of correct returns of total mortality from all causes, the existing registration agency has been strengthened by the posting of men at the different burial and cremation grounds in the city.

21. The strength of the Medical Department of the State has been increased, and it is reported to me that on plague duty—

17 Medical Officers,
19 Hospital Assistants, and
8 Medical pupils,

have been employed.

22. A grant of Rs. 40,339 has been sanctioned by the Darbar to meet extra charges on account of plague arrangements. This sum is in addition to the budget grants for unforeseen charges allotted to each division.

23. From the foregoing it will be seen that the Darbar have neither spared means nor trouble to stamp out the plague from its territory. It is now lingering at Gandevi and Billimora only, but I have every reason to hope that I shall soon have the honour of reporting the complete extirpation of the pestilence from the whole of Baroda territory.

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* The Medical Officer appointed to assist the Minister.

24. Before concluding I beg to state that I have personally visited the various parts of the city from time to time. The sanitary condition of a large native city, like Baroda, must necessarily leave something to be desired, but an immense deal has been done in the last few months to improve the sanitation and is still being done. So far as accommodation for patients and other provisions for a possible outbreak is concerned, the authorities are well prepared, but the whole system of drainage cannot be altered in a day. I am glad to record, however, that a scheme for the proper draining of the whole town, the cost of which will be about 38 lakhs, is now fairly started.

25. The rules,* etc., issued by the Darbar on this subject, are enclosed.

* Some are sent herewith and others will follow. Not reprinted.

Telegram No. 6245, dated 5th May 1897.

From the Agent to the Governor-General at Baroda, to the Secretary to the Government of India, Foreign Department.

" Your 1699-I.A. Darbar fully aware of vital importance of maintaining stringent preventive measures against plague. I am kept informed of details of their arrangements. Dr. Lowson visited Baroda on 20th March, and expressed himself satisfied with the measures then in force. All arrivals by trains examined, house to house visitation in city, which is divided into circles, each having separate hospital and Committee. Disinfectants freely used, slums improved, drainage scheme commenced and all possible precaution taken. Report will be sent to the Home Department as desired."

REPORT ON THE OUTBREAK OF BUBONIC PLAGUE IN KHANDRAONI VILLAGE, GWALIOR STATE.

1. Under instructions from H.H. the Maharajah Scindia I left Gwalior on the 17th of March and proceeded to Khandraoni village, arriving there on the 18th, to enquire into a reported outbreak of bubonic plague.

2. Khandraoni is a village situated in the Karera Tehsil of the Chanderi Subat distant from Jhansi, Dattia, Dinara and Karera, 20, 10, 7 and 12 miles respectively.

3. The population according to the last yearly census taken in July 1896 was 558 (187 men, 157 women and 214 children), of which only 5 were Mahomedans, the remainder being Hindus, principally Brahmins.

4. The total area of the village lands is 2,599 bighas, 3 biswas. The area under cultivation in the current year is 940 bighas, the average cultivated area in normal years being 1,006 bighas, and the revenue demand for the whole year being Rs. 1,374-1-0 Imperial coin.

5. On the north and west the village boundary runs with that of the villages of Rao, Mou, and Ata, of the Dattia State, while to the south and east lie the Gwalior villages of Panoha and Belloni.

6. On my arrival, on the 18th of March, I examined all the sick in the village, and the signs and symptoms present, together with the epidemic nature of the outbreak and its history, left no doubt as to the disease being bubonic plague.

7. From enquiries made from the patwari† and lumbardar‡ of the village it appears that, for some years past, several of the inhabitants of Khandraoni have been in the habit of going to Bombay and taking service there, revisiting their village at intervals, and that amongst these were two Brahmins, Bindraban and Khoobi, the former being one of the lumbardars of the villages.

8. These men came straight from Bombay to Khandraoni, arriving there on the 9th of January last (three days before Makar Sankrant in the mouth of *Poos*). On leaving Bombay Bindraban was suffering from fever and Khoobi attended him while on the way, bringing him to Jhansi by rail and from there, in a country cart, to Khandraoni, where he died 5 days after his arrival. Two days after Bindraban's death Khoobi fell ill and died in three days, and about a week after his death a native hakim of the village,

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† Patwari=Land registrar of the village. ‡ Lumbardar=Chief man of the village.

named Nazar Mahomed, who had been treating Bindraban and Khoobi, was attacked with fever and died, and at the same time another native hakim, named Gopi, who had come from Karera to treat Nazar Mahomed, also succumbed to the disease. The plague then gradually spread amongst the inhabitants of the village, and up to the date of my arrival there had been 59 seizures, of which 47 had proved fatal.

9. His Highness the Maharajah Scindia's instructions were that in the event of the plague being present every means should be employed—

(1) to stamp out the disease in the village itself;
(2) to prevent its spread to any other part of the State;
(3) to treat the sick; and
(4) to interfere as little as possible with the harvesting of the crops then in the ground.

10. Being satisfied that the disease was bubonic plague, the following principles were accepted as a basis on which measures should be taken to carry out the above instructions to a successful conclusion:—

(*a*) That the plague was due to a specific microbe.
(*b*) That this microbe could be carried by the excreta of persons suffering from plague and by clothing, wooden and earthen articles of all descriptions and by food of all kinds, cooked or uncooked.
(*c*) That the microbe once imported by any of the above agencies into a house, where conditions obtained which were favourable to its development, not alone established itself in the floor, walls and roof of that house, but also in or on every article which that house contained.
(*d*) That the conditions favourable to the development of the microbe were insanitary conditions of all kinds, especially dirt, overcrowding, and the absence of thorough ventilation and light.
(*e*) That the microbe could not establish itself unless the above conditions were present, and that it was impossible for it to exist for more than a few days in any place which was free from insanitary conditions and exposed to the direct rays of the sun, and that very high artificial heat rendered it inert.

11. For the purpose of clearness in this report the following measures based on the above principles are recorded, not in the sequence of their being given effect to, but in regard to the objects held in view, many of the measures being carried out simultaneously.

(*a*) An order was sent to the Officer Commanding the Karera Cantonment to march at once to Khandraoni with four companies of Infantry, and Hospital establishment and equipment. The Tehsildar of Karera was also ordered to come to Khardraoni and arrange for such supplies as might be necessary for the troops and villagers.
(*b*) In the meantime a nominal roll was made of all the inhabitants of the village, and it was found that the total number present was 435.
(*c*) These were each examined and were divided for the purposes of segregation into four classes, viz.:—

Class I. Those families who were perfectly healthy and amongst whom no case of plague or fever of any kind had occurred since the 9th of January (it was thought advisable to treat any case of fever as coming under the head of plague as it was impossible from questioning the villagers themselves to distinguish, with any certainty, between so-called fever and plague).
Class II. Those families who were in good health but amongst whom cases of plague and fever had occurred since 9th of January.
Class III. Those families amongst whom there were cases convalescent from plague or fever.
Class IV. Those families some of whose members were then suffering with plague or fever.

12. On the 19th of March four companies of the 6th Infantry having arrived from Karera, the inhabitants were ordered to go to their houses and remain there. Sentries were then posted on all the infected houses (*i.e.*, of Classes II, III and IV) as well as those of Class I in their immediate vicinity, and strict orders were issued to prevent any persons entering or leaving those houses or taking any article therefrom.

13. The remainder of the inhabitants (*i.e.*, Class I with the exception of those mentioned in paragraph 12) were then turned out of the village and surrounded by a cordon of sentries. This portion of the population were allowed to take any of their property which they wanted with them.

14. Classes II, III and IV as well as those of Class I living in their immediate vicinity were then successively taken out of the village and segregated one from another by a cordon of sentries, those of Class I hitherto detained being allowed to join the others of the same class.

15. These classes and those of class I above referred to were not allowed to take anything out of their houses except the clothes they were wearing, as much bedding as was absolutely necessary for their protection from the climate, their money, ornaments and metal cooking utensils.

16. In carrying out this measure I took the precaution of visiting each house in turn and saw that each family were placed in charge of an escort and conducted straight to the place appointed for their segregation, and that the order regarding the removal of any article other than those above mentioned was strictly adhered to.

17. The village having been evacuated, sentries were posted all round with strict orders to prevent any one from entering the village.

18. The following were the arrangements for feeding classes II, III, and IV :—

(*a*) Two Bunniahs* were engaged from a neighbouring village, where it was ascertained that no plague was present, and the necessary supplies were also brought from the same source.

(*b*) Both Bunniahs and supplies were placed under a guard, orders being given not to allow any of the villagers to come in contact with them, nor to allow the latter to mix with the inhabitants of the village.

(*c*) The amount of grain, etc., necessary for each individual family was calculated and supplied once a day under the following arrangements.

(*d*) The daily supplies were taken by a Bunniah under escort to the boundary of the segregation camp, where one member of each family was deputed to receive them. The supplies were then weighed and handed over, care being taken that neither the Bunniah nor his scales came in contact with the segregated inhabitants, the Bunniah was then marched back to the place allotted for supplies and again placed under the Commissariat Guard.

19. Arrangements were also made for the supply of *chappar*† huts, *charpoys*,† straw and blankets for hospital, and for the old and weakly portion of the community, while grinding stones for the portion of class I who were not allowed to bring these articles from the village were also supplied, as well as new earthen vessels to all who required them. It may here be mentioned that there was little or no grain brought out of the villages as those who were allowed to bring any had little or none to bring and were beginning to live on the current years' produce, some of which was then on the threshing floors.

20. As the segregation camps were all situated along the banks of a small river which was the usual source of water-supply, no difficulty regarding this was experienced, but care was taken that the segregation camp of the healthy portion of the inhabitants was highest up stream, while that of the hospital was lowest.

21. The owners of the infected houses as well of those of the houses in their immediate vicinity were called upon to give lists of property therein with a view to subsequent compensation ; these were made out in my presence by the patwari, and having been initialled by me, were handed over to the owners. The majority of the lists contained property of little value, but in two or three instances where the amount of grain, goor, and ghee, etc., seems suspiciously large, the owner was taken to his house and made to show where the amount of property which he had written down was, and it was invariably found that only about half the stated amount was present. The necessary correction was made in the list and owner was again-marched back to segregation camp under escort.

22. With the help of a few policemen and chuprassies hay and other inflammable materials were then placed in the infected houses and those in their immediate vicinity, which were then set fire to and destroyed under my personal supervision ; care being taken that nothing that could be burnt escaped. A short time after the houses were set fire to it began to blow half a gale, and a good many more houses than was intended were

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* Bunniah=Shopkeeper. † Chappar hut=Thatched shed ; Charpoy=Bedstead.

destroyed by fire, but this may be looked upon as an error of Providence, if such can be, on the right side. Every heap of refuse and litter in and round the village was also set fire to and burned as far as this was possible. The sentries placed over the infected houses were then withdrawn, the cordon round the village still remaining.

23. Every morning and evening a bugler blew "The assembly" for roll call and inspection in the several camps, any one showing signs of disease or debility being put apart for further examination after inspection.

24. It having been found that some of the people obtained their livelihood by daily labour and begging, these had to be put on free rations at the expense of the State, their ordinary means of livelihood being interfered with by their segregation in camp. Every effort was made to convince the people that the measures taken were entirely for their own benefit and with a view to stop the mortality amongst them. Compensation was promised for the unavoidable damage to their property and crops; they were made as comfortable as possible under the circumstances. Small luxuries such as tobacco, etc., were given to them, they were urged and encouraged to scatter themselves as much as possible, to wash themselves and their clothing, and to keep the ground in their vicinity clean. It was, moreover, pointed out that it was absolutely necessary that the Camp rules should be carried out in their entirety for the purpose of obtaining the full benefit for which they were formulated, and they were made to understand very clearly that, if necessary, these rules would be carried out by force.

25. The sentries were prohibited from entering the segregation camp and were warned not to let any of the villagers approach within 15 yards of their post.

26. The measures taken to prevent the plague from spreading to other parts of the State were as follows :—

(*a*) The whole of the staff of Civil officials, Suba, Tehsildar, Chuprasies, etc., were removed from the vicinity of the village and located near the village Belloni, nobody except the medical staff and the officers and sepoys engaged on segregation duty being allowed to remain within the boundary limits of Khandraoni village.

(*b*) Nobody, without regard to his rank, business or occupation, was permitted to enter or leave the segregation camps or cross the village boundary without an order from me and without being accompanied by one of the orderly Havildars detailed for this duty at my camp, and orders were issued to the sentries that under no pretext whatsoever was this rule to be broken, and to make this further certain, entrance to or exit from village boundary limits on segregation camps was absolutely prohibited except at one place appointed for this purpose. Considerable inconvenience no doubt arose from this rule, but it was early recognised that the strict observance of this rule was of the most vital importance, and it is satisfactory to be able to state that, with one exception which fortunately was followed by no ill result, but of which due notice was taken, no instance of this rule being broken came to my knowledge, and that the officers commanding the troops, Sir-Suba and other officials set a good example by their strict adherence to this rule.

(*c*) A list containing the names of every village within a radius of ten miles from Khandraoni was made out, these villages were divided into circles of four or five villages each according to the distance between them, and each circle was placed in charge of a policeman whose duty it was to collect daily reports from the patwaries of each vilage. The reports to contain the following information.

I. Whether there were any sick in the village, and if so, the nature of their sickness.

II. Whether any one had arrived or left the village since last report, and if so, where they had come from or gone to.

(*d*) On comparing the census of Khandraoni, taken in July 1896, with the number of people present when the roll was made out, it was seen that there was a considerable decrease in the population, even allowing for the number who had died of plague and other cause during the preceding eight months. A return was therefore called for from all villages within ten miles radius, showing if any one from Khandraoni had arrived in the village since the beginning of January, and if so, whether they were still there, a list of their names with dates of arrival being also asked for, enquiry was also made from the inhabitants of Khandraoni itself as to the whereabout of any one who had left the village since the arrival of the Brahmins, Bindraban and Khoobi from Bombay.

(*e*) Orders were issued that if there were any persons who had come from Bombay since July 1896, or from Khandraoni since the 1st of January 1897, such persons were to be segregated outside the village until inspected by the medical officer.

(*f*) A list was called for giving the names of any of the inhabitants of villages who might then be in Bombay, and orders were issued that their relations in the village should write and tell them that they were prohibited from coming back to the State during the continuance of the plague at Bombay.

(*g*) Orders were issued to the inhabitants of all villages within ten miles round that no person from Khandraoni or Bombay was to be admitted into the village; moreover, they themselves were prohibited from coming to Khandraoni, and they were also told that, except for any very urgent reasons, they were to remain at their own village for at least a month.

(*h*) The villages all round were inspected, those in which there were people who had come from Khandraoni and Bombay being taken first, and no case of plague was found to be present amongst them. False alarms were at first of frequent occurrence as the daily reports contained many cases, whose symptoms, roughly described by the Patwaries, might be those of plague; these were inspected without delay, and though doing so entailed many long rides, still there was satisfactory compensation, inasmuch as none of these cases thus inspected proved to be plague.

(*i*) Supplies for the sepoys were brought from outside into their camp, which was pitched about a mile from the villages under escort. The carts were unloaded and the cart and cartmen at once conducted outside village limits. The supplies for segregation camp were in a similar manner brought to the places appointed for the Bunniahs near which no villager was allowed to approach.

27. The arrangements for the treatment of the sick were as follows:—

(*a*) The Hospital Assistant and medicines were ordered with the troops from Karera.

(*b*) *Chapper* huts were provided for each patient, the huts being placed about 20 yards from one another, clean straw being placed on the ground, separate *chappars* were made for the other members of the patient's family who were allowed to attend upon their own sick, but were discouraged from coming in any number to the sick huts.

(*c*) *Charpoys* with blankets, etc., were supplied, suitable food was cooked for all patients either by a member of their own family or by a Brahmin who was appointed as a cook or water-carrier.

28. There being few patients in hospital nobody except the Medical Officer, Assistant Medical Officer and Hospital Assistant were allowed to enter the segregation camps.

29. A mehtar was entertained for the hospital segregation camp, and was not allowed to go outside it until it was finally broken up.

30. When a patient died the body was cremated, all the patient's clothes, *charpoy*, hut, etc., being burnt, compensation for clothes being paid to the relatives.

31. The mode of supplying the hospital camp with food has already been noted.

32. There was at first considerable difficulty in carrying out the instruction issued regarding non-interference with the harvesting of the crops, as on the arrival of the four companies of infantry from Karera it was found that the total strength amounted to only 224 sepoys, and it was impossible to cover the amount of ground within village limits with the number of sentries at my disposal, I therefore telegraphed to Gwalior to send four more companies of infantry from Lashkar, and in the meantime I had perforce to keep the inhabitants in segregation camp of a necessarily confined area, H.H. the Maharajah's promptness in acceding to my request and in despatching without delay four companies of the 10th infantry of a strength of 232 sepoys placed me in a position to carry out H. H.'s instructions regarding the crops.

33. The line of sentries round the segregation camp were thrown back to the limits of the village boundary, and the people of class I were then at liberty to harvest their crops at their leisure, with the exception of those lying within segregation camps of classes II, III and IV, and after ten days in segregation camp, those of class II, no case of plague having occurred amongst them, were also allowed to harvest their crops, and were amalgamated with class I in so far as the limit of their camp was concerned.

34. The crops of classes III and IV were harvested under the direction of the Assistant Tehsildar attached to the Subha's camp.

35. The villagers of Billoni who had a few fields just inside the Khandraoni villages limits were allowed to work under a guard, they cut their crops in one day and took them outside the chain of sentries, not having come in contact with the Khandraoni villagers in any way.

36. It was thought well to defer cleaning up the village until the infected houses as well as the insanitary site, had been exposed to the disinfecting action of the sun and air for at least three weeks, and thus prevent the danger of persons engaged in cleaning the village from contracting the disease.

37. The following were the arrangements made for cleaning and disinfecting the village :—

(a) A number was affixed to every house in the village and a list of the owners was made. The houses being divided into classes to correspond with those into which the inhabitants had been divided in the first instance except the Class II was amalgamated with Class I.

(b) The owners of class I were then required to clean their own houses and, for this purpose, were divided into working parties of not more than ten persons in each, each working party being supplied with phowras,* baskets, etc., to clean away dirt and rubbish and lime, for the purpose of whitewashing the houses inside and outside, and were placed in charge of two sepoys, who were ordered to see that this work was thoroughly and quickly carried out, and that all rubbish was removed to a distance and burnt as far as possible, that the working parties did not enter houses other than their own, and that every evening they marched them outside the chain of sentries posted round the village and saw that the phowras, baskets, etc., were deposited in the place assigned to them under a guard. Rest from noon to 2 o'clock was allowed, and the work was daily inspected in order to see that it was properly done.

(c) As the people of Classes III and IV were still segregated from the rest of the population and remained so until the camp was finally broken up, working parties were engaged to clean their houses from which the *débris* was first removed, the floors were then dug up to the depth of one and a half feet, the walls were scraped, and both were thoroughly sprayed with disinfectants by means of a fire engine, worked by hand, brought from Gwalior for this purpose.

(d) In the meantime the working parties were engaged in cleaning up the village generally, every one employed being paid daily, and the working parties being all under the supervision of sepoys told off for this purpose ; no slouching was allowed, and the work was carried out systematically and continuously until I was satisfied that the village was cleaned as far as any Indian village could be.

The village having been thoroughly cleaned and disinfected and no case of plague having occurred since the 1st April, and those who had been under treatment being now recovered, the segregation camp was broken up on the 29th April. But before this was done every man, woman and child in the hospital segregation camp was obliged to bathe and to exchange the clothes they were wearing for new ones, which were supplied free.

38. The hospital huts, patients' clothes, blankets, charpoys, and all other articles of a combustible nature were burnt, the only things brought out of the hospital segregation camp by its occupants being money, jewellery, metal cooking utensils, and the new clothes given to them. Arrangements were made for a Hospital Assistant with medicines to remain at the village for one month from the breaking up of the camp, and he was directed to hold periodical inspections and to report the result. The harvest having been gathered, and

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* Phowrah = pickaxe.

there being many in the village who obtained their livelihood by daily labour or begging, relief works were started for the former and free rations were continued to those of the latter who were unable to work. A project is being prepared for a "*Bund*"* in the vicinity of the village, and the making of this will not only give work to the inhabitants for some months to come, but will also enlarge the area of cultivation and form an increased source of revenue to the State.

39. The effect of the measures taken were too successful to allow of any extended study of the disease, as, besides the eleven cases admitted on my arrival at the village, only four more admissions took place, and those within ten days from the formation of the segregation camps. Of the total fifteen cases treated, four died, *i.e.*, 26·6 per cent. of admissions, while the mortality before the segregation camp was formed was 79·6 per cent. of seizures. The symptoms and the signs of the disease did not differ from those which have been observed during the present epidemic in Bombay, a fatal termination being preceded by pneumonic symptoms and great prostration, while in all the cases that recovered general debility was a very marked feature. In one or two instances the wounds, caused by opening the bubos, healed very slowly, and in one patient, who was convalescent for some time and quite free from fever, a small swelling appeared on the forearm, unaccompanied with pain or inflammation, but over which distinct fluctuation was present; it soon, however, disappeared. In another case the only sign present was a bubo in the groin, no fever or constitutional disturbance of any kind being present, and the patient was otherwise healthy and well nourished; this I would classify as "Pestis ambulans" (even at the risk of being considered Irish), the patient being a child of four months old. With regard to the statement that though rats are very susceptible to plague their enemy cats are immune, it may be interesting to note that a dead cat was found in one of the infected houses, but the fact that it died of plague was not verified by microscopical examination.

40. The loss for which the villagers have to be compensated is classified as follows:—

I. Damage done to rabi crops.
II. Reroofing the infected houses which were burnt down.
III. Loss of property which was burnt in the houses.

41. In order to explain fully the process of calculating compensation and to make the figures clear, the different classes of compensation above enumerated are separately dealt with and classified statements of same are appended to this report.†

42. The area cultivated with rabi was $250\frac{9}{20}$ bighas composed of 290 fields of 101 cultivators, out of which $124\frac{3}{20}$ bighas were held by the zamindars of the village as their *Khud Kasht*,‡ and $126\frac{6}{20}$ bighas were cultivated by tenants on cash or grain rent.

43. The crop was generally barley and masur, mixed gram and wheat being sown in a few fields. Nearly two-thirds of the area sown with rabi crops were irrigated, the remaining one-third being unirrigated, and on this, as the soil is mostly pondwa and inferior kanker, the crop was naturally bad, but on the irrigated portion an average outturn of five maunds per bigha was estimated.

44. When the plague segregation camp was formed the crops were ripe and had been partly cut and removed to the threshing floors, the remainder of the crops then in the ground being afterwards cut by the owners who had access to their fields, those crops belonging to people in hospital segregation camp being cut through the agency of labourers employed by the State for this purpose.

45. In this way the damage done to the standing crops was not great, and was due altogether to the cattle straying into the fields. This damage occurred owing to the small strength of the troops available for sentry duty when the camp was first formed, rendering it impossible to allow the villagers access to their fields and so prevent damage from cattle; neither was it possible, from sanitary reasons, to keep the cattle within segregation camp, as they numbered 1,500, nor could arrangements be made for their food. This state of things, however, only lasted for a couple of days, until the arrival of the four companies of Infantry from Lashkar.§

46. There were some instances, which will be enumerated hereafter, in which the people were not allowed to cut their crops at all, and they were completely damaged, compensation in full being allowed.

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* Bund=embankment. † Not reprinted. ‡ Khud kast=home farm. § Lashkar=the cantonment.

47. As all the crops had been cut before the compensation list was made out, and therefore the damage done could not be estimated from an inspection of the standing crops, the following course was taken to estimate the loss incurred :—The average outturn of the village was found by selecting seven *khalians** of different kinds of grain and belonging to different known fields, both irrigated and unirrigated, and having them threshed, cleaned and weighed ; from this an estimate was formed of the produce of each field. Enquiry was then made as to the average outturn of five adjoining villages having similar advantages and similar soil as Khandraoni, and also the average outturn of the Pergunna, and comparing the existing produce of the Khandraoni fields with the average outturn of the adjoining villages and of the whole of the Pergunna, an estimate was formed of the loss of grain in each field, and its equivalent in rupees was calculated at the market rate obtaining in the village.

48. The instances in which the crops were completely damaged and in which it is proposed to give compensation for the full value of the crop, according to the average outturn of the village, are as follows :—

(*a*) No. 5 and 6 area $1\frac{17}{20}$ bighas cultivated by Murli Dhar Brahmin, who was not allowed to cut his crops because the fields were situated inside the hospital segregation camp, where he had no admission.

(*b*) Barley store of Madho Singh, son of Bhansi, the produce of No. $\frac{265}{1}$ and 514 area $2\frac{16}{20}$ bighas which was burnt as infected grain.

(*c*) Mhowa crop of Dhalip Singh, Lumbardar, who, being in hospital, was not allowed to gather it.

49. The yearly revenue demand on the village is Rs. 1,374-1-0, out of which the zemindars have only paid a four-anna instalment before the plague outbreak, and the remainder, Rs. 1,039-15-0, is in arrears, and in order to relieve, as far as possible, the zemindars from the revenue demand, it is proposed to deduct the uncollected rents of tenants lands from the compensation payable to them for the damage done to their crops, and to credit it to the revenue due from the zemindars, having done this, so much of the compensation payable to the zemindars for their *Khud Kasht* sufficient to satisfy in full the rateable revenue demand of each individual co-sharer, according to the figures obtained from the Patwari, is also credited ; or where a full adjustment of the revenue demand was impossible, on account of the compensation falling short of the revenue demand, the whole of the compensation payable was taken in part payment. In this way Rs. 768-2-0 Imperial coin can be realized out of the revenue demand payable to the State without any burden on the pockets of the zemindars, who, in addition to being considerably relieved of the revenue demand, have the advantage of appropriating all existing grain and getting the surplus compensation.

50. The arrears of revenue then remaining uncollected would be Rs. 271-13-0 Imperial coin due from the co-sharers who had no *Khud Kasht* of rabi or whose compensation for *Khud Kasht* fell short of the revenue demand, and having regard to the disastrous effects of the plague outbreak, it is recommended that this amount should be allowed to stand over for two years, after which it could be collected by easy instalments.

51. The classified statement A,† appended to this report, shows the value of the loss in the average outturn of the crops of each man, the amount of revenue realized from him, and the compensation payable, if any, after deducting the revenue demand. A summary of this statement is as follows :—

	Rs.
Value of crops in Gaja Shahi coin	1,100-9-9
Deduct revenue in do. do.	834-11-9
Compensation to be paid under this head after deducting revenue	Rs. 265-14-0

52. Statement B,† appended to this report, shows the distribution of the arrears of revenue over the four Pattas, into which the village lands are divided, and the account within the Pattas will be made by the Patwari afterwards, having regard to the arrears which were originally due from each of the co-sharers and to the amount realized out of the compensation of his *Khud Kasht* and his tenants' lands by the method here proposed.

53. This class of compensation refers only to persons whose houses, being infected, or contiguous to those infected, were burnt.

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* Khalian=threshing floor out in the fields. † Not reprinted.

54. In order to make an estimate of the cost of re-roofing the houses, measurements of each roof were taken, and the amount of wood required for this purpose and also for doors, etc., was noted; an estimate was then made of the different kinds of materials required for each roof, and the cost of re-roofing calculated at the local rate, and adding to this the value of the doors and the cost of labour, the amount of compensation payable for each house separately was obtained. Most of the houses had tile roofing, the average cost of which at the village rate is 0-1-7 per square yard, thatched roofing costing half as much more. Some of the houses had masonry roofs, the cost of these has been calculated separately at local rates. Statement C,* appended to this report, shows detail of materials required and the compensation payable for each house.

55. Compensation under this head is payable only to those whose houses were burnt. Lists of property in those houses which were to be burnt were made out beforehand, but it was difficult to calculate the compensation due to those villagers whose houses were accidently burnt on account of the gale which sprung up after the infected houses were set fire to; but as, before any of the houses were burnt, the people were given every opportunity of removing their cash, gold and silver ornaments and metal utensils, and most of those were removed by them or were made over to them from time to time as they were found in their houses, the only articles which were destroyed consisted chiefly of food grains, gur, ghee and clothing. The list given to the villagers in the first instance was called for, and all articles which had been removed by, or handed over to, them were struck out of the lists, and compensation for the remaining articles was then calculated. The lists which were filed by the owners of those houses which were accidentally burnt, after this had occurred, were carefully gone through. The receptacles in which they said their grain, etc., was stored were inspected, their capacity ascertained, and an estimate thus formed of the compensation due.

56. Tabular Statement D* shows the compensation payable under the different heads and, at a glance, how much each man is to get for the total loss suffered by him.

57. The amount is calculated in Gajashahi rupees as that is the coin current in the village.

I cannot close the report without expressing my thanks to the officials who were detailed for duty with me at Khandraoni. The Assistant Medical Officer, Doctor Wagle, L.R.C.P. & S., Edinburgh, rendered me invaluable assistance and spared neither time nor trouble in carrying out the duties entrusted to him. The Sir-Suba of Esagarh made excellent arrangements for supplies, etc., for the camp, until he was obliged to leave by sickness brought on by the extreme heat, after which his work was well carried out by the Suba Sahib of Chanderi. I cannot too highly praise the work of Moonshi Jugalkishore, to whom the cleaning up the village was for the most part entrusted as well as that of estimating the amount of compensation payable to the villagers for property destroyed and crops damaged. His report is incorporated in this, and having gone over the figures, I am quite satisfied that his estimates are correct and equitable in every respect. The conduct of the troops (4 companies of the 6th and 4 companies of 10th Infantry) engaged on segregation duty was all that could be desired, and their strict obedience to orders contributed in no small degree to the result obtained, my thanks being especially due to Captain Eseri Singh, commanding the 10th Infantry. Inspector of Police, Gayapershad, performed his duties to my entire satisfaction, and the subordinate officials mentioned in the margin also worked well. I trust the Darbar will recognize the work done by the above officials, the due performance of which, together with the very full authority given to me by H. H. the Maharaja, enabled me to carry out H. H.'s instructions to what, I trust, will be considered a successful conclusion.

Patwari Thakoorpershad of Khandraoni.
Police Sepoy Ismail of Jigni.
Do. late Mohamed of Karera.

A. M. CROFTS, SURGEON-LT.-COL.,
Medl. Officer to H. H. the Maharajah, Scindia.

Gwalior,
The 8th May 1897.

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* Not reprinted.

From the GOVERNMENT OF INDIA to the SECRETARY OF STATE FOR INDIA.

(Sanitary No. 17.)

MY LORD, Simla, 22nd June 1897.

WE have the honour to continue the narrative of events connected with the plague contained in our Sanitary Despatches ending with Despatch No. 16, dated the 1st instant.

2. In all parts of the Bombay Presidency and Sind the number of cases continues to diminish and, unless the advent of the rainy season causes a recrudescence of the disease, it may reasonably be hoped that the epidemic is dying out. In our Despatch of the 1st June we informed Your Lordship that during the period 11th to 28th May the average daily numbers of seizures and deaths in the City of Bombay were 11 and 8 respectively. During the period 29th May to 17th June the numbers were 8 and 4. During the 3 days, 14th to 16th June, the number of seizures rose to considerably above the average, but there was only 1 case on the 18th, and apart from these 3 days the fall in the number of cases has been steady though gradual. It is also satisfactory to notice that the percentage of fatal cases is less than during the earlier stages of the epidemic. The average daily total mortality during the period 29th May to 17th June was 78, a figure 2 in excess of that for the period 11th to 28th May. The average daily mortality during the corresponding period of the previous 5 years was 73. In our last Despatch we remarked that the number of deaths from ordinary fevers shown in the weekly mortality return for the City of Bombay had been for some weeks much further below the normal than could be accounted for by the present diminution of the population, and that we had enquired of the Bombay Government whether the cause of this could be ascertained. The explanation which has been given is that it is probable that the thorough cleansing the city has undergone, and the other sanitary measures that have been adopted, have rendered it more healthy than before the outbreak of the epidemic.

3. The Cutch State is at present the most infected portion of the Bombay Presidency, but even here the number of cases in Mandvi has fallen from about 100 to a little over 10 a day. This is no doubt to a large extent due to the fact that the greater portion of the inhabitants have quitted the town and have either camped outside away from the infection or have altogether left the place. There has been some little increase in the number of cases reported from villages in Cutch; the Political Agent has been ordered by the Government of Bombay to direct special attention to the matter. To this Despatch are appended letters from the Political Agent of Cutch and the medical officers who have been deputed to the State describing the outbreak at Mandvi and the measures taken to suppress it. It is to be regretted that the existence of the epidemic was not discovered earlier, but the measures that have now been adopted are well considered and thorough and are meeting with success. Due attention is also being paid to the permanent improvement of the unsatisfactory sanitary condition of the town.

4. From other parts of the Bombay Presidency proper the reports are very satisfactory. In the districts of Thana and Kolaba and the Naosari Division of the Baroda territory, where the epidemic was once rife, the number of seizures has fallen to 1 or 2 a day. In the Surat District where it was equally bad, no fresh case has been reported since the 11th instant. In Poona the average number of cases, since the beginning of the month, has been about 1 a day. From other places which were once infected only occasional cases are reported.

5. In Sind the improvement is equally marked. The epidemic appears to have nearly died out at Karachi. For the period 29th May to 8th June, the average daily number of seizures and deaths were 3 and 2·5 respectively. Since then there have been only 2 seizures and 3 deaths. The Shikarpur District is the only other place in Sind from which cases have been reported since the 4th instant. It was stated in our last Despatch that the state of affairs in that district was occasioning some anxiety. Indigenous cases continue to occur, but are less numerous than before. There have been 23 cases since the beginning of the month. The restrictions imposed on the traffic on the Sind Railway have been removed with the exception that booking is not allowed at the stations in the immediate neighbourhood of Rohri. This precaution is necessary to prevent evasion of the inspection prescribed for travellers starting from Rohri. The Government of Bombay reported on the 1st instant that the arrangements made at Rohri for the isolation of the sick and the evacuation of the infected quarter of the place were satisfactory.

6. A series of charts showing the course of the plague in Bombay, Karachi and other places where the disease has been severe was appended to our Sanitary Despatch No. 15 of the 12th May 1897. With this Despatch is enclosed a fresh set* continued up to the beginning of the present month, which illustrates the further decline of the epidemic. A number of spare sets of the charts are forwarded and we would suggest to Your Lordship that some foreign Governments might like to receive copies.

7. Three more cases, which, we fear, are true cases of plague, have occurred at Hardwar during the present month and further anxiety has been occasioned by the fact that there has been a considerable mortality among rats at Kankhal which lies one mile south of Hardwar and is inhabited by many of the priests who minister in the Hardwar temples. A strong staff of medical officers are present at Hardwar, including Mr. Hankin and another officer who has had special experience in Bombay. The Government of the North-Western Provinces and Oudh reports that all possible precautions are taken. The town has been divided into sections, each under the charge of a Commissioned Medical Officer; disinfection is rigorously carried out as well as a house-to-house inspection on which the medical officer is accompanied by a female doctor.

8. Since the date of our last Despatch we have received intimation that three cases occurred near Jowalia in Rajputana in the beginning of May. The first case was imported and in the other two cases the sufferers were relatives of the man first attacked. Due precautions were taken and there was no further diffusion of the malady. We have made special enquiries with regard to the measures taken in Rajputana to detect any cases of plague that may occur and to prevent the spread of infection. The reports show that the measures taken are satisfactory. The Agent to the Governor General, Central India, reported on the 14th instant that a plague case had been taken out of the Bombay train at Rutlam and terminated fatally on the 12th instant. All necessary precautions were taken.

9. Your Lordship has doubtless received intimation of the existence of plague at Jeddah and that the rules prescribed by the recent Venice Convention have been enforced in Egypt against arrivals from the Hedjaz. To this Despatch is appended a copy of correspondence with the Consul at Jeddah and the Local Governments on this subject.* The Consul at Jeddah has telegraphed that plague is epidemic in Jeddah, but of a mild type. He states that the disease first broke out amongst pilgrims from Hadramaut and then attacked natives of the place. He reports that no cases have occurred amongst Indian pilgrims. We have also directed that the Resident at Aden should endeavour to ascertain whether plague exists in Hadramaut at the present time, and that he should take precautions to prevent infection being brought thence into Aden. We have sanctioned the imposition at Aden and other Indian ports of the rules of the Venice Convention against arrivals for the Hedjaz. The Consul at Jeddah telegraphed on the 11th instant that there were 600 Indian pilgrims at Jeddah and 2,000 at Mecca. Some pilgrims have already returned from the Hedjaz and the others are about to return. It has therefore been necessary to enjoin the adoption of special precautions at Bombay and Calcutta to prevent these returning pilgrims from carrying infection with them. The precautions prescribed in our telegrams to the Governments of Bombay and Bengal of the 16th instant are based on the rules of the Venice Convention. Before it was reported that plague existed in the Hedjaz, we had issued orders that returning pilgrims landing at Bombay should be despatched to their destination without being permitted to mix with the population of Bombay in order to avoid any risk of their carrying with them infection from that place.

10. In conclusion we forward for your Lordship's information a copy of the more important Resolutions* recently issued by the Government of Bombay on matters connected with the plague.

We have, &c.,
(Signed) ELGIN,
&c., &c.

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* Not reprinted.

Enclosures.

No. 136, dated Mandvi, 29th April 1897.

From Major G. E. Hyde Cates, Political Agent, Cutch, to the Secretary to the Government of Bombay, General Department.

I have the honour to report that Dr. Lowson, Plague Commissioner, arrived on Saturday last at Mandvi, where I met him with the Dewan and Chief Medical Officer of the Cutch State and the local officials. After discussing with the above officials and myself, the best measures to be adopted for the suppression of the plague here, and inspecting the town, I proceeded with Dr. Lowson to Bhuj, and the next day had an interview with His Highness the Rao, who readily agreed to all Dr. Lowson's proposals, the result being that Surgeon-Lieutenant-Colonel Wilkins and a complete staff consisting of four nurses, a native doctor, hospital assistant, and ward boys are expected here this morning.

On Sunday afternoon Dr. Lowson and myself returned to Mandvi, and the following morning Dr. Lowson set to work to organise measures for stamping out the plague. An excellent building has been converted into a Hindu hospital capable of holding about 180 patients. At present those under observation are also kept in a separate portion of this building, but another building will, if obtainable, be converted into an observation hospital or sheds erected. A site has been selected for a health camp and sheds are being erected as quickly as possible. The general hospital has been converted into a hospital for Mahomedans, and a building opposite has been set apart for an observation hospital. The Mahomedans of the village of Salaya, a suburb of Mandvi, and chiefly occupied by fishermen and sailors, are inclined to give some trouble, and it has been found necessary to allow them to have a separate hospital on a site chosen by the Plague Commissioner. A guard has been placed here and a hospital assistant and a karkun to take note of the cases admitted and deaths. The medical officer will inspect this hospital daily, but the Mahomedans of Salaya have been permitted to maintain this hospital and use their own medicines only under certain conditions imposed by the Plague Commissioner. Should they break the rules laid down for them, it will be necessary to remove the cases to the hospital already alluded to. The Hindus have gladly taken advantage of the hospital and have given no trouble, and have generally assisted in bringing cases of plague to notice.

Sepoys have been put on at the four city gates to prevent people leaving for villages and to take them to the health camp if they wish to reside outside the city. They have also orders to prevent healthy people coming to reside in the town. In addition to these, sepoys at the three city gates through which corpses are allowed to be carried, a writer is placed to take note of corpses carried through for burial or burning, and these are supplemented by writers posted at the several burning and burial grounds to act as a check.

Numbers are now leaving by steamer, and it is difficult to prevent them unless the steamers refuse to take passengers, and I have advised Karachi and Kathiawar to impose quarantine on boats from Mandvi. I am informed by Dr. Lowson that this has already been done at Bombay. It is probable therefore that the steamers will cease taking passengers from Cutch Mandvi.

When the plague broke out in Bombay and Karachi, I advised and made suggestions to the Darbar, and the measures adopted by them have been reported, *vide* my No. 38, dated 5th February last. That the measures suggested were carried out fairly well is evidenced by the fact that the Darbar has managed to keep the plague out of Mandvi for so long, notwithstanding the number of persons who landed here from Bombay and Karachi. When the exodus from those places really began, something over 5,000 persons landed here per week. I am afraid that latterly the officials here have been relaxing their vigilance, and that cases have been occurring which, owing to defective measures, have not been found out in time, or that they failed to report. As soon as I heard rumours of there being more plague cases than reported to me, I at once visited Mandvi, as reported in my letter No. 120 of 20th instant. I then drew up a memorandum of suggestions, and also had a discussion with the Dewan. On my arrival here on Saturday last, the 24th instant, I found that nothing had been done, and it is owing to the ignorance of the officials here in plague matters, and their general apathy at the outset, that the plague has got such a hold, and accounts for the heavy increase in the mortality.

At the first, I suggested that all persons landing at Mandvi from infected ports should be kept in quarantine camp for at least eight days, but when over 5,000 passengers per week were landing, it meant a very big business, and there was difficulty about water and supplies for such large numbers. Only those who were found to be affected or doubtful cases were detained, and the rest allowed to proceed to their villages, but orders were issued to keep them in quarantine outside the village for 15 days, and persons bound for Bhuj from Mandvi were kept in quarantine for 10 days at a place called Dahisra, 15 miles from Bhuj. This place was chosen owing to there being a large dharamsala there. Latterly when 11 indigenous cases occurred in the village of Ruwapur and several cases in Kera and 2 imported cases in Bhuj previous to 24th March, I suggested that boats from Bombay, Karachi and other infected ports should be put in quarantine. I felt sure that without this the plague would sooner or later get into Mandvi, and after each visit to Mandvi, of which I have made three, I told the Darbar that if it did once get a hold on Mandvi they would have it in a terrible form, which has turned out correct. The town is one of the most filthy I have ever seen, and though I have constantly spoken about this, nothing until too late was done towards putting it in a more sanitary condition. From 6 a.m. on the 27th to 6 a.m. on the 28th instant, the mortality was 104 in a population which now must be barely 25,000. From 6 a.m. yesterday till 6 a.m. this morning the mortality is 87.

The materials at hand for working with, in the shape of police, labour and carts, etc., are meagre, and at present there is nothing like a sufficient quantity of disinfectants (but they are expected in a day or two from Bombay), though I brought this to the notice of the Darbar. The people are utterly panicstricken and great difficulty is found in getting coolies and men for carrying dead bodies, but the advent of Dr. Wilkins and staff from Bombay this morning will, it is hoped, soon put matters right.

P.S.—To prevent the spread of the plague to Bhuj, the Dewan informs me that the following future measures to those already reported have been taken :—

> Besides the arrangements for quarantine and segregation at Dahisra, Kera and Madhopur, two medical men have been stationed outside the Bhid and Mahadeo gates of Bhuj for further examination of new arrivals in order to segregate the sick, place doubtful cases under observation and the healthy in quarantine for three weeks. All deaths in the town are registered at the gates. Only two gates are left open, others being closed with windows kept open for allowing townpeople to go out for necessary purposes and tickets are issued to them for readmission as a safeguard against newcomers getting in. Cleanliness is enforced in the town and its surroundings and orders have been sent out for the supply of sufficient quantities of disinfectants.

I have also suggested the following to His Highness the Rao :—

"(1) Erect some sheds for a Hindu hospital as above and prepare any suitable building for a hospital.
(2) Erect some sheds for Mahomedans.
(3) Erect sheds or have building for observation hospital.
(4) Erect sheds outside for a health camp.
(5) Segregation sheds or suitable building.
(6) Have ready plenty of disinfectants.
(7) Fill up unhealthy places where there is stagnant water, etc.
(8) Plenty of disinfectants used in town.
(9) Put on extra men and carts to keep town clear.
(10) Keep strict watch on deaths and find out causes.

"Dr. Damania will know what is required.

"By having 1, 2, 3, 4, 5, 6, ready, if any case of plague occurs, as I trust it will not, the sick man and all in contact with him can be *at once* removed. It is most important that this should be done *at once* and the house thoroughly disinfected and kept locked up for a time. It would be well to make surprise visits occasionally to any house when sickness is reported, there to see that it is not plague. Very prompt measures of removal of a sick person and all connected with him may nip the disease in the bud. Dr. Damania has seen now what should have been done and very strict measures and *prompt* action may prevent further mischief and expense."

I have suggested and His Highness the Rao has consented to employing the services of Surgeon-Captain Ricketts now at Bhuj with the 17th Native Infantry to advise and supervise measures for the prevention of the spread of the plague, for its suppression and prompt treatment should it appear, in addition to his other duties which are light. I have this day telegraphed to the President, Plague Committee, in the matter, and official sanction will be asked for in due course, but it is all important that there should be European supervision at Bhuj as soon as possible.

I hope to be able to go into Bhuj in the course of a day or two when matters are more forward here and will then send a further report.

Mandvi; (Signed) G. E. Hyde Cates, Major,
30th April 1897. Political Agent, Cutch.

Dated Bombay, 5th May 1897.

From James A. Lowson, Esq., Plague Commissioner, Bombay, to the Secretary to the Government of Bombay, General Department.

I have the honour to submit a report on plague matters at Mandvi Cutch.

Before entering into details a few remarks on the general situation are desirable. I arrived there on 24th April and found the town in all the horrors and difficulties caused by a severe epidemic. Large numbers were dying daily; large numbers were fleeing in terror. Shops shut and provisions difficult to procure. Large numbers had left the town and camped in the neighbourhood. Several districts of the town had been intensely infected and some parts of these were almost completely deserted. The sick when found were lying untended in houses. Sometimes locked in by friends, sometimes locked in by themselves to die. Defoe's description of the London epidemic in 1665 could well be applied to Cutch Mandvi, only several times intensified, as the officials of the town and their staff had done absolutely nothing for alleviating the distress prevailing.

Even after getting to work, the difficulties became greater as those engaged in assisting got more and more frightened and great discretion had to be used during the first few days in getting as much as possible out of the few men who were willing to work. These are very few now and no amount of money will at present procure more in Mandvi. Orders for labourers have been sent to Bhuj and surrounding villages, but without avail so far. No one can appreciate these labour difficulties until an epidemic of this sort occurs; for instance the difficulties of removal of sick and burial of dead bring themselves prominently to notice when no bullock-carts can be found in the town and men are also wanting for carrying the dead. Families before being completely swept away must always come down to one or two, and when these get sick even Hindus cannot be got to bury them. One should not be surprised to hear that when the cleansing staff have got to work and opened all the closed houses many corpses have been removed.

Of information regarding the outbreak from the commencement there is practically none. I have asked all the officials regarding it, but only vague guesses can be hazarded, not even an idea of the total mortality can be had, as there was not a single person who ever thought of counting burials or burnings. That it was introduced from Bombay or Karachi almost goes without saying.

The following figures will give some notion of the size of the town and population. These are derived from the City Magistrate who seems to have the soundest information on this point. Rough map A* will assist in getting an idea of the geography. On the 1st December 1896 the population was probably 33,500 inside the city walls, 2,500 outside the city wall (in district marked with lines), whilst in the village of Salaya, on the opposite side of the river, there were about 7,000 inhabitants. The following statement is drawn up from figures supplied by Shepherd and Company and the British India Company.

	Arrivals from Bombay side.	Arrivals from Karachi.	Departures to Bombay side.	Departures to Karachi.
December	4,279	1,736	3,718	1,160
January	6,011	1,599	2,933	466
February	2,787	3,601	1,765	433
March	2,461	1,401	2,336	564
April	1,453	953	2,621	735
Total	16,991	8,390	13,373	3,358

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* Not reprinted.

Assuming that half of the influx belonged to Mandvi and half to the country round about, the estimated population at the beginning of every month is as follows :—

1st January	43,568
1st February	45,618
1st March	47,143
1st April	47,623
1st May	46,858

Of these 46,858 only about 12,000 at a liberal calculation are now within the city walls; about 3,000 outside the city walls in close proximity, 4,000 in village of Salaya and 3,000 from latter village encamped on the sand and gardens close by ; about 1,000 to 1,200 have left for their villages and Bhuj, so that, not counting the people who have died, over 20,000 people are camped out to the north and west of the town within a five-mile radius.

The local officials think, and give it as their opinion, that the epidemic began on or about the 5th April with a death-rate on 1st May of 139 in a considerably reduced population! Now, in all my reading and experience of the plague in China and India, I have never heard of such a rapid spread, if true. It is almost incredible, and I strongly incline to the opinion that it must have been raging even at the time of its reported beginning, and this opinion is supported by the fact that a considerable number of the inhabitants were already camped out at that time. In addition Salaya undoubtedly became infected after Mandvi, and an inspection of the graveyards and other casual information received from the villagers there, leads me to think that it was even then raging in Salaya. Take Poona, for example, with 120,000 inhabitants. It took almost three months to reach a death-rate of, at most, 80 per diem in a town three times the size! and where no real attempt was made to combat it till March.

Notwithstanding the fact that two particular localities are intensely infected, yet there is such a general diffusion of the disease over the town that I am convinced it must have been going on for over two months at least in numbers that should have been remarked upon by anyone of the officials with the faintest claim to intelligence.

The Political Agent, Major Cates, met me on arrival on Saturday, 24th April, in company with the Dewan, Chief Medical Officer and other officials. The situation talked over with the result that with the tacit consent of the Political Agent I took charge of operations and until we found out what available force there was for work, wired for disinfectants lime, etc., from Bombay ; ordered such various disinfecting apparatus (tubs, ladders, buckets, etc.) as was to be had in town to be got ready ; selected hospital with segregation accommodation for Hindus and ordered apparatus and stores for them ; selected hospital and segregation house for Mahomedans, and likewise apparatus and stores for them ; and ordered other minor details to be carried out. A site was also selected for a health camp as even then one could see that at least parts of the town would require to be evacuated ; ordered sepoys to be posted at the burying and burning grounds to procure death statistics. Major Cates and I then left for Bhuj at 7 p.m. Next morning we had an interview with His Highness the Rao and explained the situation to him, saw Colonel Morse regarding a supply of sepoys for work, leaving again for Mandvi the same afternoon.

On Monday morning on reaching the Plague Office (the Custom House) we found that practically nothing had been done in our absence. Before evening, however, we got most of the aforementioned matters seen to, Major Cates looking after the posting of sepoys at gate, ghats and cemeteries. All bullock-carts leaving the city with people and belongings were ordered to be stopped ; but I am afraid this order was not obeyed—a more useless and ignorant police force could not be imagined. Having got hospital accommodation provided, we went into the town and got fifteen cases removed during the same evening.

Medical examination of passengers was so strict on this day that no one left by the Karachi or Bombay steamers. Tubs and disinfecting ground have been prepared for passengers, clothing, etc., but so far this has not been used, as after Monday so many people came up for examination before leaving that it would have been ridiculous to commence disinfection without a large staff ; besides, as may be seen later, we were able to prevent most of them leaving by other means.

Supply of bullock-carts ordered from Bhuj. Municipal Secretary asked to supply a list of houses which had had plague deaths and mark them with sign for disinfection. It took this official four days to supply a list of 80.

Arrangements were completed for procuring correct death returns.

Mr. Pestonji Sorabji, deputed to supervise plague operations, arrived, whilst the Dewan and all other State officials left to look after their own affairs, only the Chief Medical Officer remaining to assist, whilst the Political Agent wired for another waiwatdar, as that official was old and absolutely useless.

27th April.—Hospital equipment was added to and extension of accommodation made by the erection of sheds in the hospital compound and also by enclosing verandahs. A disinfecting gang of 40 men at high wages was organised and taught how to do their work, but these had considerable difficulties to contend with, as no bullock-carts could be had for transport of gear, whilst bhisties could not be found to supply water for use, which had to be brought from some distance. In the afternoon, having impressed six bullock carts, the Chief Medical Officer and I had a successful house-to-house visitation in so far as 53 cases were removed to hospital.

Work on health camp proceeded slowly for want of labour.

28th April.—Our house-to-house visitation party removed 34 cases in the morning. Two men were deputed to go round and remove tiles from every house, as all houses must be treated as infected.

The food-supply at hospitals gave great trouble as every newly imported shopkeeper runs away after half an hour's business. The burial staff also do the same and none of the police sepoys will assist at this work except two Somalilanders. In the afternoon the Political Agent assisting the village of Salaya was visited. This is a village of fishermen, principally Mahomedans and some trouble was anticipated here. Whilst removing sick a large crowd assembled and we had to desist after requesting two leaders of the community to come to a meeting at the Plague Office. This conference was so successful that on the following morning 43 sick persons were in a compound termed by courtesy a hospital.

29th April.—Of 25 sepoys arrived from Bhuj, 8 were detached to act as hospital police as the local sepoys could not maintain any sort of order.

Three hundred and sixty passengers for Karachi were prevented from leaving, as the clerks in the office had not time to write out certificates.

Surgeon-Lieutenant-Colonel Wilkins and staff arrived and in the afternoon the charge of operations was taken over by him.

On the 30th April the men of the disinfecting squad were put on the health camp work as this was not progressing rapidly enough. On 29th, 30th April and 1st May a search party was out picking up cases shown by two men deputed to find them out, and about 20 were removed each day to hospital, their bedding and clothing being burnt as they went along; beyond this, however, little was done owing to want of men. The hospital arrangements were greatly improved by the presence of the nurses, but the doctors in charge, Doctors ——— and ———, had no idea of their real duties in a hospital in such a trying time, first class at giving orders but never putting a hand forward to *do* anything. Notwithstanding the most explicit instructions not one of the many relatives admitted to hospital with the sick had been kept in segregation after the sick had died.

On the 2nd May the distress in the town and want of food had become so pronounced that Mr. Pestonji Sorabji opened a shop where grain could be procured cheap—a most judicious and kindly act to say the least.

Of the sanitary state of the town not much can be said as ordinary sanitation was conspicuous by its absence, the insides of houses especially being very dirty. In the village of Salaya however most of the houses and huts were beautifully clean, walls well whitewashed and floors smooth and well swept, with very little of the ordinary rubbish lying about. Another lesson that mere clean houses are not sufficient to keep out the plague, overcrowding and peculiar habits having far more to do with its spread in this instance than dirty houses.

One most important point to note regarding Mandvi is this: it has a very large population of cattle living inside the city walls in houses and courtyards, where frequently every member of a family has been cut off; yet the deaths of these animals during the last month must have been extremely rare, as frequent interrogation on this point failed to elicit the fact of even one death having occurred. This only goes to prove that, notwithstanding the opinions of some hearsay scientists, what I demonstrated experimentally in 1895 is also true practically—that bubonic plague does not occur in the acute form in these animals, in fact in any form. If any practical proof of this was wanting, I do not think a stronger one could be had than what has occurred in Mandvi Cutch, which is essentially a city of cattle.

As in most towns with severe infection rats have practically died out.

The cleansing squad of 40 men organised on 27th April were able to disinfect and whitewash on the

28th April	15 houses
29th "	20 "
30th "	31 "
1st May	33 "

but this was of course extremely slow progress where probably between 6,000 and 7,000 houses will have to be treated.

The following are the statistics up to 2nd May :—

Date.	Admissions to hospitals.	Deaths in hospitals.	Total mortality.
To 6 A.M. on—			
25th April	...	...	78 Totally incredible.
26th "	...	...	73
27th "	15	...	75
28th "	53	4	104
29th "	34+43 (Salaya)	9	87
30th "	18+6 "	17	113
1st May	42 (28 in Town Hospital)	46	139
2nd "	...	...	129

The present intention is to work the town in an ordinary plague way and vacate about a fourth of it at a time to get it cleaned and whitewashed, but as will be seen from the accompanying diagram B,* a considerable amount of attention will have to be paid to the surrounding country, as it would be folly to merely clear the town whilst the four or five-mile radius remains so infected. At present I calculate about 20,000 people or perhaps more are camped out within that radius and it will be seen that a considerable number of deaths take place here. On the 1st May 36 occurred among these people and on 2nd 30. A doctor who is a good horseman is a *sine qua non* for this work. I was able to visit some of the nearer huts and have several cases removed to hospital on the 28th, but not being able to get across country could not do much more work in this line.

Hospital accommodation.—By slightly extending the Hindu hospital I estimate almost 200 patients can be accommodated there. At present there is certainly room for 150. The Mahomedan City Hospital will accommodate about 24, but it is practically only an observation hospital for people who have fever on examination before embarking, as there are two other Mahomedan hospitals. The Mahomedan matshed hospital in Salaya can be extended eastwards as required. The Mahomedan matshed hospital at the north-western corner of the town wall can also be extended as required. The Borah hospital has very good accommodation and is excellently looked after, eight or ten patients last time I visited it.

Medical inspection of passengers leaving will probably be kept up, its greatest use is that from some accident or other many of those wishing to be examined are detained so as to lose the steamer.

When Surgeon-Lieutenant-Colonel Wilkins arrived, I consulted with him as to the staff he would require, the number of which of course always depends on the man who is to direct them, and two European Sanitary Inspectors and 200 coolies for whitewashing purposes were wired for from Bombay. Dr. Wilkins appeared to think he could do all the medical work easily with the assistance of another European medical officer, but I think it would be unwise to try this. If two European medical officers do the work, you can rest satisfied that everything is not well done, nor every point carefully attended to. I would suggest that a second junior medical officer should be detailed to assist there, if only for ten days or a fortnight, and that the following approximate duties should be laid down.

Dr. Wilkins, No. 1 *Officer.*—Several charge of town and operations also of Salaya. European charge of hospitals which is badly wanted not so much in treatment of sick as in administration. It is not sufficient to drudge through this with only a glance now and again. If all the sick people are picked up in town 250 patients would have to be looked after and all their friends—no light work, especially in seeing that segregation is properly carried out after the death of the sick. He should also carry out the medical inspection of passengers carefully, although this is not indispensable as there is medical detention at Karachi. He should have charge of the health camp and segregation camps : when they are running properly this cannot be done by mere looking in "to see that things are right."

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* Not reprinted.

No. 2. *Officer*—Should be in charge of the country to north and west of town and assist in town work and other work as desired.

One man even could do the work, but it would be done in such perfunctory way that it is desirable to have two men at least to help him. An increased hospital staff is absolutely necessary, and the nurses and sepoys should be sent up to-day—4 of the former and 10 of the latter.

I also suggested the use of the Europeans from 6—25 in number. I could have employed 25 easily, and suggested that 6 might be usefully employed ; this however was *pooh-poohed* at once by the Political Agent and Dr. Wilkins, though Mr. Pestonji Sorabji, who is acquainted with the situation, was strongly of my opinion at the time. No greater mistake can be made in plague work than trying to undertake a lot of work with an inadequate staff ; it always costs time and money and leads to chaos. Just take, for instance, the following :—On 1st May to 6 a.m., there were 28 admissions to the Hindu Hospital, mostly sent in from town after search with the detections, but in addition to this there were 47 dead bodies which also passed through the gates, most of which could properly have been discovered alive by a good search, and these in their turn must have infected more. One of the most important points in these plague measures is *thorough* search, not wandering about picking up cases here and there, where one can scarcely enter a street without being aware of their presence. Fortunately, the mortality surely cannot long remain as it is, even without any attack on it, although we should never prognosticate in plague. The town mortality will fall rapidly as so few people are left there, but the outside mortality will fall much more slowly. Most of the local officials are of little or no use, hence my suggesting the use of, say, six Europeans to assist. I do not agree with the opinion so often expressed by people who have had no experience of plague work that "Tommies" are not the men to do plague work amongst the natives. I only suggest that Europeans should be utilized, and the only ones that I imagine can be had just now are non-commissioned officers, and there is not the slightest necessity for them going in uniform. The way they conduct themselves generally depends on the ability of their leader to keep them in order.

At all towns and villages, I am informed, a strict quarantine is kept up, and so far apparently with success.

One or two of these places I saw. As it was impossible to visit any more, a report on the arrangements has been asked, but beyond giving information on details to the Chief Medical Officer, and impressing on him the necessity for making this as thorough as possible, I would do little.

Since writing the above I have seen General Gatacre, and he is arranging to send up two medical officers, ten more ward sepoys, and four or six nurses if they can be spared. This will put the staff on a proper footing.

I cannot conclude without bringing to your notice the services which Mr. Pestonji Sorabji has already rendered at Mandvi ; it is not too much to say that without his help little or nothing could have been done, and the progress made in the first few days was greatly due to his tact and energy.

Despatch from THE SECRETARY OF STATE to THE GOVERNOR-GENERAL OF INDIA in Council.

No. 98 (Revenue.)

MY LORD, 24th June 1897.

WITH reference to your Excellency's telegrams, dated the 26th March and the 4th May 1897, regarding risks from the importation of wool from Western India, I forward copy of the correspondence noted below.*

2. It will be seen that the Local Government Board do not propose, in the present circumstances, to take steps for prohibiting the importation of bales of wool from India.

I have, &c.,
(Signed) GEORGE HAMILTON.

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* To the Local Government Board, dated 29th March 1897. From ditto, dated the 2nd April 1897. to ditto, dated the 25th May 1897. From ditto, dated the 9th June 1897.

Enclosures.

No. 1.

India Office,
29th March 1897.

SIR,

I AM directed by the Secretary of State for India to forward copies of the telegrams and papers marginally noted,* regarding the risk of plague contagion being brought to the United Kingdom in bales of wool despatched from Bombay and Karachi, where the plague has now been rife for some months. According to the latest trade returns, 8,729,000 lbs. of wool were despatched from Indian ports to the United Kingdom during the three months ending on the 28th February 1897; of these despatches, about four-fifths were sent from Bombay and Karachi.

*Telegram to Viceroy, dated 3rd February 1897.
Telegram from ditto, dated 26th February 1897.
Telegram to ditto, dated 2nd March 1897.
Telegram from ditto, dated 18th March 1897.
Telegram to ditto, dated 24th March 1897.
Telegram from ditto, dated 26th March 1897.
Report by Mr. Hankin on the vitality of the plague microbe in grain.
Answer given in Parliament by the First Lord of the Treasury to Mr. Godson, M.P's., question on the 9th February 1897.

It will be seen that anxiety was expressed by British manufacturers, lest plague contagion should be brought to England in bales of wool. The Governments of India and Bombay have not yet been able to take effectual precautions against continuation of the wool packed and pressed in Bombay and Karachi yards. Until the report of Mr. Hankin, the Bacteriologist, regarding the behaviour of the plague microbe in wool is received, Lord George Hamilton is unable to express an opinion, whether the bales of wool now on the sea, or about to be despatched from Bombay and Karachi, carry any risk of plague to people who may handle the wool in England. I am to inquire whether the scientific advisers of the Local Government Board are able to give an opinion upon this point, or whether they would prefer to wait for the bacteriological report.

Further, I am directed to say that, as at present advised, His Lordship is not disposed to act upon the suggestion made in the latest telegram from the Government of India, that British consignees of wool from Bombay and Karachi should be warned to arrange for disinfecting their wool at the ports of arrival.

I am to request the favour of a very early reply.

I have, &c.,
A. GODLEY.

The Secretary,
The Local Government Board.

No. 2.

Local Government Board, Whitehall, S.W.,
2nd April 1897.

SIR,

I AM directed by the Local Government Board to acknowledge the receipt of your letter of the 29th ultimo (R. and S. 1079) and enclosures, with reference to the risk of plague contagion being brought to the United Kingdom in bales of wool despatched from Bombay and Karachi.

In reply, I am to state, for the information of the Secretary of State for India, that the Board are informed by their medical officer that he is not aware of any evidence to show that there is danger to the United Kingdom merely because of the arrival of bales of wool from ports where plague is prevalent, and that the discovery of the plague bacillus after a certain number of days in an article that had been purposely inoculated with that bacillus ought not in his judgment to be regarded as affording proof that the article in question, whether it be wool or any other substance, was likely, in the ordinary trade processes, to convey that infection. I am to add, that at the Venice Conference, it was decided that raw wools (*laines brutes*) were to be regarded as " susceptibles," this attitude being adopted, not because it was known that animals from which wool is derived were liable to plague, or that wool from deceased animals was likely to possess the infective property of plague, but because it was not possible to deny that wool might become infective during the processes to which it was subjected before being shipped. The Venice Convention, however, contains no prohibition against the importation of wool from infected places, nor does it require disinfection to be carried out before wool is received into a country, these points being left to the discretion of the importing country.

I am to add, that if the Government of India consider that wool is subjected to processes in infected ports of India which are likely to result in the bales being exposed to actual infection by plague, it seems to the Board that the action necessary to prevent risk in this way should be adopted in India, and not be thrown upon the sanitary authorities of the ports of arrival in this country.

I am, &c.,
ALFRED D. ADRIAN,
Assistant Secretary.

The Under Secretary of State
for India.

No. 3.

India Office,
25th May 1897.

SIR,

WITH reference to Mr. Adrian's letter No. 48,242 K (2) dated the 2nd April 1897, I am directed by the Secretary of State for India to forward copies of further telegrams* on the subject of possible risks from wool imported from India into the United Kingdom.

*Telegram to the Government of India, dated 3rd April 1897.
Ditto from ditto, dated 4th May 1897.

From the 1st October to the 28th February last, ten million pounds of wool were exported from Bombay and Karachi to the United Kingdom. So far as is known, no cases of plague have occurred among the classes dealing with or using this Indian wool. If the Local Government Board are still of the opinion expressed in Mr. Adrian's letter cited above, Lord George Hamilton would propose not to take any steps for stopping or controlling the wool exports from Western India.

I have, &c.,
HORACE WALPOLE.

The Secretary,
Local Government Board.

No. 4.

Local Government Board, Whitehall, S.W.
9th June 1897.

SIR,

I AM directed by the Local Government Board to acknowledge the receipt of your letter of the 25th ultimo (R. & S. 1412) forwarding copies of further telegrams on the subject of possible risks from wool imported from India into the United Kingdom, and I am to state, for the information of the Secretary of State for India, that the Board adhere to the opinion expressed in their letter of the 2nd April last.

I am, however, to add that, if the Secretary of State will refer to the last paragraph of that letter, he will see that the Board did not, as implied in the telegram of the 3rd April 1897, from the Secretary of State to the Viceroy, suggest that prohibition, if needed, could not be effected in England. Their letter referred to action which might be taken in India to prevent bales from being exposed to actual infection. They now learn that the Government of India are unable to devise means to that end, but as at present advised, the Board do not propose, even under these circumstances, to take steps, under the Venice Convention or otherwise, to prohibit the importation of bales of wool from India.

I am, &c.,
ALFRED D. ADRIAN,
Assistant Secretary.

The Under Secretary of State
for India.

From the GOVERNMENT OF INDIA to the SECRETARY OF STATE FOR INDIA.

(Sanitary No. 20.)

MY LORD, Simla, 21st July 1897.

IN continuation of our Sanitary Despatch No. 17, dated the 22nd June, we have the honour to send the following further narrative of events connected with the plague.

2. Although cases still occur in the city of Bombay their number continues to diminish. The figures forwarded with our Despatch of the 22nd June showed for the first eighteen days of that month an average number of daily seizures and deaths of 8 and 4 respectively. During the remainder of June the daily averages were 3 and 2·6, and during the first seventeen days of July only 21 cases and 17 deaths have been reported. The total mortality in the city of Bombay has been somewhat above the average during the three weeks ending the 6th instant. There is, however, no reason to believe that this excess is due to failure to record deaths from plague. To this Despatch is appended a letter from the Chairman of the Bombay Plague Committee,* giving the explanation with regard to the diminution in the number of deaths from ordinary fever to which allusion was made in the second paragraph of our Despatch of the 22nd June. The fall has recently been less marked, owing perhaps to seasonal causes.

3. From the date of our last Despatch until early in the present month the progress in the Bombay Presidency proper was most satisfactory; except in Cutch, only a few cases occurred at intervals. During the past fortnight there has been a slight recrudescence in the Naosari Division of the Baroda Territory, and to a lesser extent in Poona City, and in the Districts of Kolaba, Surat and Satara. The number of cases reported is nowhere great, and we trust that the increase, which is perhaps to be attributed to the advent of the rains, will not continue. A Commissioned Medical Officer, who has had special experience of the plague, has been sent to the Naosari Division to advise the Baroda Darbar on the means to be taken to prevent the disease from again obtaining a hold over that locality, and there have been no cases within the Baroda State for the last six days. In the town of Mandvi and in the rest of Cutch the epidemic has greatly declined, and the cases average only one or two a day.

4. Karachi was altogether free from fresh cases of plague from the 28th June to the 6th July. Since the latter date there have been six cases. As in the case of Bombay, there has been a marked decline in the mortality from ordinary fevers. From the rest of Sind no cases have been reported since 26th June. The epidemic in Sind having thus almost died out, the Government of the Punjab has been able to somewhat lessen the stringency of its precautions, and, while still keeping up the main inspection posts on the railway and the Indus River, it has abandoned a number of the minor stations. A letter explaining the arrangements at present maintained is appended to this Despatch.*

5. In the Portuguese territory of Damaun also the epidemic has abated since the beginning of June, but we have not exact information as to the present position of affairs. We have requested the Government of Bombay to ask the Governor-General of Portuguese India to cause Damaun to be thoroughly cleansed and disinfected. In our Sanitary Despatch No. 16, dated the 1st of June, allusion was made to the quarantine cordon established by the Collector of Surat round the Damaun frontier. A copy of further correspondence on the subject with the Government of Bombay is enclosed.* We consider that the original quarantine arrangements made with the endeavour to practically isolate Damaun from all intercourse with British territory were needlessly stringent, and a source of unnecessary hardship, but that the present modified arrangements, which permit egress from Damaun after examination and the detention of the suspicious under observation, and provide for the entry of commodities into Portuguese territory, are not open to objection.

6. No case of plague has occurred at Hardwar since the 8th June and Government of the North-Western Provinces and Oudh has therefore passed orders relaxing the stringent precautions that had been enforced, and permitting the reoccupation of the quarter of the town that had been infected. A note on the outbreak prepared by the Government of the North-Western Provinces and Oudh is enclosed.* It shows the origin of the outbreak so far as this can be ascertained and describes in detail the measures successfully adopted for dealing with it.

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* Not reprinted.

7. To this Despatch is appended a statement illustrating, from the commencement of the outbreak up to the beginning of the present month, the extent of the epidemic in the Bombay Presidency and its severity in the different localities attacked.* The total number of reported cases amounted on the 2nd July to a little under 37,000, and the total number of reported deaths to a little under 30,000. The number of reported deaths is 81 per cent. of the number of reported seizures. It is known that, especially during the earlier period of the epidemic, the reporting of plague cases was by no means complete and the number of cases that have actually occurred must considerably exceed 37,000. In the city of Bombay the reported deaths stand at 10,683, but Your Lordship will observe that the total mortality of the city from the week ending the 1st September, 1896, to the 21st April, 1897, exceeded that of the corresponding average mortality during the same period for the previous five years by 20,828, and we are of opinion that the greater part of this excess must be attributed to plague and to diseases of the respiratory organs which, though directly attributable to plague, were not at the time diagnosed as such.

Outside Bombay, the epidemic was severest in the towns of Poona, Karachi and Mandvi, where the number of seizures per 100,000 of the population was as follows :—

Karachi	3,952
Poona	1,643
Mandvi	11,204†

The epidemic in Mandvi has been most virulent. Figures for Damaun are not available, but it is believed that the epidemic at that place was as severe as in any locality in the Bombay Presidency.

There are only seven territorial divisions of British and Native territory in which the number of plague cases exceeded one per one thousand of the population. In other parts the disease was only slightly or not at all epidemic. The seven localities are :—

	Number of seizures per 100,000 persons.
Thana District	547
Janjira State	344
Surat District	316
Kolaba District	249
Naosari Division (Baroda Territory)	160
Shikarpur District	108
Cutch State	107

8. The Consul at Jeddah telegraphed on the 15th inst. that plague is considered to be nearly extinct at that place, no cases and only one death having occurred in eleven days. We have telegraphed to Your Lordship on the subject of the return from Jeddah of the indigent Indian pilgrims.

9. We have received Your Lordship's Despatch, No. 92 (Revenue), dated the 17th June, forwarding a copy of questions asked by Mr. Maclean in the House of Commons and of Your Lordship's reply thereto, in connection with the plague. We have requested the Government of Bombay to send copies of the papers alluded to by Mr. Maclean, and we have asked that Government for an expression of opinion regarding the advisability or otherwise of publishing the papers, and for any observations they may desire to make on the case.

10. We forward for Your Lordship's information a copy of correspondence* with the Government of Bengal in which are explained our views on the subject of the compulsory segregation of the sick in public or private hospitals, a matter which has engaged considerable attention in the North-Western and Lower Provinces of Bengal, and elsewhere. In the letter from the Secretary in our Home Department, No. 1768 (Sanitary), dated the 30th June, the Government of Bengal was instructed that it is for that Government to thoroughly inform itself and finally advise as to what measures can safely be taken in the matter of segregation. It has, on the one hand, to consider the danger of the spread of plague and the question whether and to what extent home-segregation could be enforced. On the other hand, it must take into account the state of feeling in the Province, and the extent to which political disaffection and disorder are to be apprehended from the enforcement of a rule rendering every person suspected of suffering from, or being infected with, plague liable to be sent to hospital. It is further stated in the letter of the 30th June,

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* Not reprinted † Indigenous cases only.

that we are disposed to agree that segregation is the best preventive measure that can be devised, and that if it is to be enforced in a place like Calcutta, segregation in hospital is essential for the greater part of the population likely to be affected, but that in carrying out any measures of segregation due regard should be had, as in the case of Europeans, to the position in society of those classes of the community who can be relied on to take efficient measures with the object of preventing the spread of infection, and to other considerations of a like nature. Stress was also laid on the importance of providing accommodation in or near the hospitals for the immediate family of the patient, in order to avoid enforced separation of the sufferer from his family and friends. The decline of the epidemic has rendered it unnecessary for the Government of Bengal to issue any fresh rules, but we considered it advisable to explain our views on the matter, and to ask the Bengal Government for revised proposals in case the regulations should ever be required.

11. To this Despatch are appended copies of recent notifications and orders* issued by Local Governments under the Epidemic Diseases Act, and a copy of the more important resolutions lately issued by the Government of Bombay in connection with the plague.

We have, &c.,
(Signed) ELGIN,
&c., &c.

From the GOVERNMENT OF INDIA to the SECRETARY OF STATE FOR INDIA.

(Sanitary No. 21.)

MY LORD, Simla, 11th August 1897.

IN continuation of our Sanitary Despatch, No. 20, dated the 21st July, we have the honour to send the following further narrative of events connected with the plague.

2. In the City of Bombay there has been a slight increase in the number of reported cases of plague. From the 1st to the 17th July only 21 seizures and 17 deaths were reported; for the week ending the 24th July the figures were 14 and 9 respectively, for the following week 27 and 18, and for the week ending the 7th instant 16 and 8. It is stated in the weekly health reports of the city that the cases are of a mild type and sporadic, and the proportion of fatal cases is much less than during the period when the epidemic was virulent. There has been an increase in the general mortality prevailing in the city which was noticed in our last Despatch. From the 1st to the 17th July the average daily total mortality from all causes was 84, during the week ending the 24th instant 99, during the following week 142, and 145 during the first seven days of the current month. The average daily mortality for the period of the five years 1892—1896 corresponding to the three weeks ending the 3rd instant was only 74. Special inquiry has been made into this high mortality and it is reported that it is not due to recrudescence of plague. A certain amount of the increase has been caused by cholera, and that the rest is due mainly to dysentery, diarrhœa and lung diseases. House-to-house visitation has been resumed in all districts, but has not resulted in the discovery of many cases of plague. Sir James Campbell, the Chairman of the Plague Committee, reports, as the result of the enquiry made by the Committee, that the increased mortality appears to be due to the damp condition of the houses—the result of the measures taken for disinfecting—and to the immigration of persons in bad health from distressed districts. Sir James Campbell, however, states that this opinoin is not universally held, and that it is specially questioned in cases of death from pneumonia. We have asked the Government of Bombay whether bacteriological investigation has been made in these doubtful cases.

3. The cases have somewhat increased in number in the Poona and Satára Districts. In the Poona District the places most affected are the town, cantonment and suburbs of Poona, the cantonment of Kirkhi and the station of Lanowli. In the Satára District the disease is centred in the small town of Karád (population, according to the last census, 12,086), situated four miles from the Southern Mahrartta Railway. No cases have been reported from the Surat and only one from the Kolaba District during the current month but a few cases have occurred in the Nasik District and in the Kolhapur and Palanpur States. In Baroda territory only fifteen cases have been reported since the cases reported

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* Not reprinted.

in our last Despatch. To this Despatch is appended a report by Surgeon-Captain Milne,* the officer deputed to the Naosari Division to advise the Baroda Durbar and examine the arrangements made to prevent a fresh outbreak of the disease. The Agent to the Governor-General is being requested to secure the adoption of the improvements suggested by Dr. Milne. In Mandvi only one case has been reported since the beginning of the current month. In the rest of Cutch the cases have averaged about 8 a day during the current month. Three cases of plague have been detected at the Rutlam railway inspection station. The sufferers have been treated in the isolation hospital and the prescribed precautions taken.

4. To assist the local authorities in suppressing isolated outbreaks of plague, such as those that have occurred at places in the Poona and Satára districts, the Government of Bombay have, at the suggestion of Dr. Lowson and on the advice of their Surgeon-General, directed the maintenance of "flying columns." These columns will ordinarily consist of a Commissioned Medical Officer, two Hospital Assistants, coolies and sepoys. The column will be furnished with a supply of disinfectants and will be accompanied by a female, probably a nurse. In their Resolution of the 26th July, which is appended to this Despatch,* the Government of Bombay have authorised the Surgeon-General to form two of these "flying columns" at once, and to add to this number f necessary. We consider that this measure is well adapted to assist in the suppression of the local outbreaks which recent experience shows are still to be feared.

5. The reports from Sind continue to be very satisfactory. Outside Karachi no case has been reported since the 24th June, and in Karachi itself there have been only seven cases since those reported in our last Despatch. The last of these cases occurred on the 27th July. The general health of the town of Karachi is also very good, and the total mortality has for some weeks past been much below the normal. We trust to be soon able to inform Your Lordship that the whole of Sind is free from plague, and *healthy* within the meaning of the term as employed in the Venice Sanitary Convention.

6. To this Despatch is appended a Resolution of the Government of the North-Western Provinces and Oudh reviewing the events connected with the cases of plague that occurred at Hardwar.*

7. We have received Your Lordship's Despatch, No. 107 (Revenue), dated the 8th July,* forwarding for our information a copy of correspondence with the Foreign Office in regard to the action which should be taken to give effect to the Venice Plague Convention. The measures that have been prescribed and adopted to prevent the spread of plague in this country, and which have been reported to Your Lordship in our previous Despatches on the subject, are in accordance with the rules laid down in Chapter II. of the Regulations, appended to the Convention. The Government of Bombay and other Local Governments and Administrations have employed an elaborate and carefully devised system to ensure the immediate report of ascertained and suspected cases of plague. Quarantine has not been enforced to prevent the spread of infection by land, but systematic and thorough arrangements have been carried out for the inspection of travellers from infected districts, for the segregation of persons likely to carry infection, for the isolation and treatment of plague-stricken travellers, for the disinfection of all baggage likely to contain the seeds of infection, for the surveillance of travellers from infected districts on arrival at their destination, and for the disinfection of railway carriages. The question of the treatment of susceptible articles and goods has also been considered and the import of rags, used apparel and bedding, waste paper and used gunny-bags from the Bombay Presidency and Sind into any other part of India has been prohibited. With our Sanitary Despatch No. 16, dated the 1st June, we sent for Your Lordship's information a copy of a circular of the same date forwarding a copy of the Convention to the Maritime Local Governments with a letter explaining its terms and instructing the Local Governments to modify their rules with regard to the inspection of vessels at the time of departure and with regard to the protective measures adopted against infected ports. We are still in correspondence with the Maritime Local Governments, and we will shortly address Your Lordship again and forward a copy of the revised rules which are at present being prepared. In accordance with the remarks made in paragraph 4 of the letter from the India Office to the Foreign Office, No. 3, dated the 24th June, we will notify to the signatory powers the appearance of plague in any district, its extension to a fresh port or area, should this occur, its disappearance from any port or area, and the adoption of

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* Not reprinted.

protective and preventive measures, in the manner indicated in that paragraph. We are at present preparing for transmission to the signatory powers a collection of the orders which have been issued by ourselves and by the several Local Governments and Administrations.

8. In conclusion we forward for Your Lordship's information a copy of the more important resolutions and orders* recently issued by the Government of Bombay in connection with the plague.

We have, &c.,
(Signed) ELGIN,
&c., &c.

From the GOVERNMENT OF INDIA to the SECRETARY OF STATE FOR INDIA.

(Sanitary No. 24.)

MY LORD, Simla, 7th October 1897.

IN continuation of our Sanitary Despatch, No. 21, dated the 11th August, we have the honour to send the following further narrative of events connected with the plague :—

2. In the City of Bombay the daily number of cases of plague continues to show some increase. In June the total number of reported cases was 182, in July 62, in August 124, and in September 221. Of these 221 cases, 82 occurred during the first half and 139 during the second half of the month. In August the percentage of cases which terminated fatally was 56, and in September 76.

The total mortality in the city since the beginning of June was :—

June	2,319
July	3,114
August	4,076
September	3,620

During the first three weeks of September the mortality was 2,482, as compared with an average of 1,483 during the corresponding period of the preceding five years. The excess mortality was partly due to the existence of cholera in an epidemic form. From the official reports received there does not appear to be reason to apprehend that cases showing the usual signs and symptoms of plague are escaping detection, but we do not feel assured that the high mortality in Bombay may not be due in some measure to pneumonic forms of the disease which are difficult to diagnose except after bacteriological examination. This, however, has been carried out in several instances, but with negative results. House-to-house visitation is still carried on, and operations against the disease are conducted by the Plague Committee on the same lines as heretofore.

3. Outside the City of Bombay the disease continues to spread and increase in severity, and the position has again become one of considerable anxiety. The following list shows the number of cases reported during the month of September from the Districts and States now chiefly affected :—

Satara District	2,317
Poona „	904
Cutch State...	522
Nasik District	347
Poona City...	296
Palanpur State	276
Surat District	198
Thana „	106
Kolaba „	79

Some cases are also occurring in Baroda Territory and in the Districts of Ahmednagar, Sholapur and Ratnagiri. In the Satara District the virulence of the epidemic does not at present show signs of diminishing. In the City of Poona there has recently been a marked increase in the number of cases, but in the District the epidemic appears to be declining. In Cutch the cases are again increasing in number. In the

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* Not reprinted.

Palanpur State there were more cases in the second than in the first part of September, but during the last few days the number has declined. In the Thana and Nasik Districts the end of the month showed some decline in the number of cases, and in the Districts of Surat and Kolaba the number of cases has not been numerous and the position of affairs is about stationary.

Karad was the first place in the Satara District in which the new epidemic broke out. Here and also at Kaledhon, the next place in the district to be seriously affected, the disease has declined, but it has since become epidemic in a number of other places. At Kirkee and Lonavla, in the Poona District, the malady has abated, and the disease is now worst at Godhadi, in the Sirur Taluka, and has also extended with less virulence to some other places. Mandvi, in Cutch, is now free from plague, but the disease exists in a number of villages mostly situated in the Mandvi Taluka. In the Districts of Nasik, Surat and Thana the places principally affected are Igatpuri, Surat and Kalyan respectively. In the Palanpur State the cases are occuring in the town of Palanpur itself.

4. On the 21st of September we sent a telegram to the Government of Bombay, stating that the situation appeared to us to be very grave, and suggesting that a committee should be appointed for the purpose of proceeding to centres where outbreaks occur in order to aid the local authorities with their advice. The Government of Bombay replied that they had appointed a general advising and inspecting officer. Surgeon-Major R. J. Baker, who had had great experience of the plague in Sind, was first appointed to this post, and on his health failing he was succeeded by Surgeon-Major A. V. Anderson, Deputy-Sanitary Commissioner, who is an able officer with large experience of the plague. The rainy season has greatly obstructed the regular prosecution of the operations, and especially the segregation of the infected. The advent of the fine weather has now removed this difficulty, and the Government of Bombay assure us that the District Officers understand the necessity for the evacuation of infected houses in rural areas. To this Despatch is appended an interesting memorandum by the Commissioner in Sind illustrating the success of the efforts made in that province to remove the inhabitants of infected localities out of their insanitary surroundings and to detain them in carefully supervised camps. Flying columns, the constitution and duties of which were explained in our last Despatch, have been for some time at work in the infected localities of Karad and Kaledhon, in the Satara District, and Igatpuri and Lonavla, in the District of Poona. At Poona itself house-to-house visitation and the other measures previously adopted have been re-introduced, and the help of a number of native gentlemen has been enlisted to assist in house-to-house visitation and to use their influence over the people. M. Haffkine has been continuing his experiments and treatment in the Poona and Satara Districts. At Palanpur, where the presence of plague is a special menace to Northern India, the operations have been placed in charge of a special Commissioned Medical Officer of experience, and the measures successfully taken during the first outbreak at that place have been again adopted. Special care is taken in the examination of all persons leaving Palanpur by road and rail, and any one who is in any way suspicious or likely to carry infection is detained. The series of inspection posts which were established during the earlier period of the epidemic along the lines of communication leading from one part of India to another are maintained, with the exception that when Sind became free of plague the inspection of travellers from Sind was discontinued. Appended to this Despatch is a list giving the names of the whole series of inspection stations, and another list showing the stations at which female inspectors have been posted.* The Government of Bombay are at present considering a report submitted by a Committee of experienced officers appointed to devise, if possible, further means of preventing people from leaving infected localities and entering other places until suitable precautions have been taken with respect to them.

In a telegram, dated the 21st August, 1897, we informed Your Lordship that Sind was free from plague. Since that date it has remained so, with the exception of a single case at Karachi reported by the Government of Bombay on the 1st of October. Enquiry has been made from the Government of Bombay whether there is any reason to believe that the case was of indigenous origin, and quarantine against Karachi will not be re-imposed nor will intimation be sent to Foreign Governments unless there is diffusion of the malady, and it becomes necessary to take action under Chapter II., Section II., of the Venice Sanitary Convention of 1897. Careful inspection of vessels and persons arriving from Bombay and other ports on the West Coast is maintained at Karachi, and as an additional precaution travellers by rail from Karachi are inspected before departure with a view to discover any case that might have escaped detection during the examination of the vessel.

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* Not reprinted.

5. We regret to have to inform Your Lordship that twelve cases of plague have been reported from Kankhal, a small town in the immediate neighbourhood of Hardwar. The Government of the North-Western Provinces and Oudh believe that this fresh outbreak was occasioned by pilgrims from the Bombay Presidency, but the cause does not appear to have been as yet ascertained with certainty. The Government of the North-Western Provinces and Oudh has taken the same stringent measures that were successfully adopted during the previous outbreak at Hardwar. The whole place has been evacuated and the inhabitants are being detained in a segregation camp whilst their dwellings are being thoroughly cleansed and disinfected. It is stated that the disposition of the people is excellent, and we trust that the outbreak will be suppressed without difficulty. The Mahants have been persuaded to postpone the next religious fair which takes place at Hardwar. A copy of papers containing a vote of thanks presented by the members of the Hardwar Union Municipal Board on behalf of the inhabitants of Hardwar, Kankhal, and Jawalapur to the District Magistrate of Saharanpur is appended to this Despatch.* The inhabitants tendered their thanks to the officers concerned for their zeal and devotion in suppression of the disease, and for their consideration of the feelings of the people in all matters concerning their religious and social customs.

6. In paragraph 7 of our Despatch of the 11th August it was stated that we were in correspondence with the maritime Local Governments on the subject of the modification in accordance with the Venice Sanitary Convention of their rules for the examination of outward bound vessels and for the adoption of protective measures against infected posts. A copy of that correspondence and of the rules framed in accordance with our instructions by the Governments of Madras and Bengal and the draft rules prepared by the Government of Burma are appended to this Despatch.* The Government of Bombay have not yet issued their amended regulations, and a copy of them will be sent for Your Lordship's information as soon as they are published. It will be seen from the correspondence* that we were obliged to suggest a number of alterations in the draft rules originally proposed by the Government of Bombay. Your Lordship will obsere that the various rules have been drawn in strict adherence to the principles and prescriptions of the Venice Sanitary Convention, and we are of opinion that they are calculated to serve well the purpose of affording practical security without unnecessary inconvenience, or hindrance to communication. Broadly the rules for the examination of outward-bound vessels require the careful examination by day of all persons, whether passengers or officers or members of the crew, sailing on the vessel. If the examination is made on shore, then any person suffering or suspected to be suffering from plague, together with persons who have been in immediate contact with him, are prevented from embarking and are kept in segregation on shore. The articles belonging to the sick person and his attendants which are deemed likely to be contaminated must also be disinfected on shore. If the examination takes place on board, then the sick person and his attendants must be removed from the vessel with their baggage, in which the articles likely to be contaminated must be disinfected, as also the portion of the vessel in which the sick person has resided. The fact of the removal of the declared or suspected case, and the precautions adopted, must be set forth in the bill of health. The rules for the treatment of arrivals in Indian ports from infected ports require "healthy" and "suspected" vessels to be dealt with in accordance with the regulations of the Venice Convention, and also provide for the "observation" or "surveillance" of persons sailing in healthy vessels which have had a passage of less than ten days from an infected port. We have throughout laid the strongest stress on the necessity of detaining the sick and the persons whom it is necessary to keep under "observation" on shore, in shelter carefully constructed with a view to proper sanitary arrangements. It appears to us to be of the greatest importance that the surroundings of the persons whom it is feared may have been in contact with infection should be as inimical as possible to the growth of the disease.

7. In only one respect has it been found necessary to depart in some degree from the letter of the Regulations of the Venice Convention. The first paragraph of Section II. of Chapter I. of the Regulations of the Venice Convention requires the examination of the persons sailing on board a vessel from an infected port to be made on shore at the time of departure. The rules which we have sanctioned, subject to Your Lordship's approval, permit the examination to be made on board if the enforcement of examination on shore would give rise to grave difficulty and inconvenience. The reasons which occasioned the adoption of this course are set forth at length in the letter of the Government of Bombay of the 22nd July and its enclosures and in our reply of the 6th August.

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* Not reprinted.

The advisers of the Government of Bombay pointed out that there are very grave obstacles to the examination on shore of all persons sailing from the Port of Bombay, and the Governor in Council, accepting this view, asked that the Convention might be so modified as to allow of inspection on shore or on board, as the circumstances of any particular port might render necessary. After a careful consideration of the subject, we were constrained to accept the opinion of the Government of Bombay and their advisers and to authorize the continuance of the practice at that time adopted at the Port of Bombay, under which the examination was made on board or on shore as might be convenient. In arriving at this conclusion we were specially influenced by the following considerations. Section II. of Chapter I. of the Venice Convention, relating to sanitary measures for ships sailing from infected ports is divided into two portions, the first relating to ordinary vessels and the second relating to pilgrim ships. In the case of the latter the direction to examine on shore is followed by a remark that in carrying out this measure each Government may take local considerations and conditions into account, and a footnote explains that the Conference decided that in the Dutch Indies the inspection may be carried out on board ship. Sir James Campbell, the Commissioner of Customs at Bombay, pointed out that, if the concession of examination on board can be made in regard to the most dangerous class of passengers, namely, pilgrims, it ought also to be made in the case of other persons should circumstances render this desirable. And it was shown that the circumstances of the Port of Bombay rendered the concession imperative. It was pointed out that the most important portion of the examination is the examination of the crew, firstly because of the persons examined the greater number belong to crews of vessels, and secondly because experience has shown that the crews are much more likely to be infected than the passengers. It was further shown that in the case of the crews it is practically impossible to examine them all on shore, and that in the less important case of the passengers, though it is possible, it would give rise to very serious inconvenience both to the passengers and to the regular working of the port arrangements. Lastly, we attach particular importance to the great success that has attended the examination under the arrangements hitherto prescribed by the Government of Bombay, and we consider that this success is the strongest argument that can be urged for the continuance of those arrangements.

In the case of vessels berthed in the roadstead of the Port of Madras and sailing from the smaller ports in the Madras Presidency the same difficulty was encountered as at Bombay. At the Port of Calcutta it was found possible to arrange for examination on shore, but only at the cost of a delay and an inconvenience which called forth protestations from the mercantile community, in consequence of which we authorized the Local Government to relax the rule. In these circumstances we trust that Your Lordship will approve our action in permitting examination to be made on board in cases where strict adherence to the rule laid down by the Convention would have occasioned delay and interference with the regular working of port arrangements without any additional protection to the health of vessels sailing for foreign ports. We also trust that Your Lordship will, if necessary, cause the reasons which have led to this single modification of the Venice Convention to be explained to Foreign Governments.

8. To this Despatch are appended copies of the more important Resolutions recently issued by the Government of Bombay in connection with the plague.*

We have, &c.,
(Signed) ELGIN,
&c., &c.

Enclosures.

Telegram No. 2166, dated Simla, 21st September 1897.

From the Secretary to the Government of India, Home Department, to the Secretary to the Government of Bombay, General Department.

Present state of plague in Bombay Presidency appears to the Government of India to be very grave. They would be glad to learn how far the system devised by the Bombay Government of sending flying columns to affected localities has been followed, and whether connection of infected house is being inforced in rural tracts. The prospect of plague extending to places where the local authorities have not had personal experience in dealing with it appears to the Governor-General in Council to make it desirable to consider whether a committee of officers who have had such experience, might not be appointed under the presidency of some one like Wingate, to proceed to centres where outbreaks occur, with a view to aiding local authorities with their advice in dealing with it. Their functions might be somewhat similar to those recently entrusted to Drs. Lowson and Reade. Governor General in Council will be glad to learn how Bombay Government regard this suggestion, and whether they are prepared to carry it out.

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* Not reprinted.

Telegram, No. P–1571–P., dated Poona, 23rd September 1897.

From the Secretary to the Government of Bombay, General Department, to the Secretary to the Government of India, Home Department.

Your telegram 2166 Sanitary of 21st. Flying columns sent to Igatpuri, Lanavla, Karad, Kaledhon. District Officers understand the necessity for evacuating infected houses in rural tracts. Hitherto, rain has made provision of segregation camps very great difficulty, in some cases an impossibility. The idea of a committee did occur to this Government, but owing paucity medical and administrative officers, they have been obliged to work with single inspecting and advising officer instead of commiteee. Doctor Baker, with great Sind plague experience, was first appointed inspecting plague officer, but has broken down and been invalided. Succeeded by Anderson, Deputy Sanitary Commissioner, with great experience of plague in Thana last season. An experienced committee has just reported on question of preventing the spread of plague.

No. 4424—2981–P., dated Bombay Castle, 14th August 1897.

From the Secretary to the Government of Bombay, General Department, to the Secretary to the Government of India, Home Department.

With reference to your letters No. 1058, dated 25th March 1897, and No. 1853, dated the 21st July 1897, I am directed to forward, for the information of the Government of India, the accompanying copy of a Memorandum No. 3772, dated the 30th idem, from the Commissioner in Sind, furnishing the facts collected by him in connection with the Karachi Health Camps bearing on the question to what extent plague is communicable by contagion, and to state that the report referred to in the last paragraph of the Commissioner's Memorandum will be submitted to the Government of India when received.

Memorandum from the Commissioner in Sind, No. 3772, *dated the* 30*th July* 1897 :—

"With reference to Government telegram No. P.—1071–P., dated 28th instant, the Acting Commissioner in Sind regrets that he is unable immediately to give a complete report on the subject of Government Resolution No. 1786—1245–P., of the 1st April, but the information which he is able to supply in the following paragraphs furnishes the strongest evidence that plague will not incubate for ten days or even five when the persons who have been exposed to infection are removed from the infected area to a healthy locality or camp, provided that their bodies and clothes are thoroughly disinfected before admission to the camp, and that no communication is permitted with outside during their detention.

"2. The figures of cases and deaths due to plague among the inhabitants of camps which have been regularly furnished to Government are misleading in this way that no distinction has been drawn between camps regarding the degree to which the inhabitants were exposed to infection or were liable to contract the disease during their residence.

"3. Take for an instance the Nasarpuri Camp, the first that was established. The huts were new and the locality healthy. The population was permitted to enter the camp carrying with them their sick, their dirty clothes and all their belongings. They were permitted to go daily to their work, and to have such intercourse as they pleased with the rest of the town, and no restrictions were placed upon other persons entering the camp. Add to this that the sick were not segregated from the healthy, the survivors after death were merely placed in a new hut with their belongings, the hut in which death occurred and the clothes and bedding of the deceased only being burnt, and it is then a matter for surprise what an effect the mere removal of the inhabitants had. The Nasarpuris belonged to an influential and well-to-do class, and it was a matter of importance in the early days of the plague to induce the population to move voluntarily. The Nasarpuri Camp opened with a population varying from 2,500 to 3,000 during the first two or three weeks following the 24th January and closed with a population of nearly 1,000 at the end of May. The total numbers of cases and deaths during these five months were 97 and 80, respectively, of which 38 cases and deaths occurred within the first fortnight.

"4. The following examples, however, of camps instituted when the organization was complete, show the results which followed strict segregation and supervision. The village of Kalankot in the Trans-Lyari quarter had a record of 42 cases and 33 deaths, between the 7th and 16th March, in a population of 900 roughly. The village was entirely evacuated on the 17th March, and the inhabitants placed in huts 500 yards away. They were not disinfected before entering the camp. The following words are quoted from the Collector of Karachi's report:—

'The sick were segregated, but there was no disinfection ; 19* cases occurred during the first eight days (*i.e.*, within the ordinary incubation period) after which the disease completely disappeared, except one case, which was traced to infection from outside and occurred six weeks after the move.'

"5. On the 1st and 2nd May, the inhabitants of a village called Gharibabad in the Trans-Lyari quarter, were located in the same camp, which the Kalankot population left two days previously to return to their homes. The Gharibabad population of 849 was thoroughly disinfected before they were admitted into the huts. On the 3rd May, 2 cases of plague were found, and none occurred afterwards. Twelve cases had occurred in Gharibabad village during the week previous to removal.

"6. A small village of 170 Mekranis who were badly infected, were placed in huts on the Trans-Lyari side, on the 4th May, after thorough disinfection. No further cases appeared among them.

"7. A small nest of tumble-down houses known as Nagarbai's compound, became infected. The inhabitants, about 200, were disinfected and moved into a camp not more than 100 yards away. There had been 28 cases and 18 deaths in the 20 days prior to the move, including 4 cases and 3 deaths on the day previous to, and 1 on the day of removal. Only 1 case occurred three days after removal.

"8. Plague broke out in Kiamari in February. On the 20th February the disease appeared in the old native village, where it remained till April, when the whole population was turned out and the village burnt. What is known as the new village was treated in the same way.

"'Scarcely a hut in this area,' writes the President of the Plague Committee, 'inhabited by 1,300 persons could be declared free from infection. The Kiamari Health Camp of 255 huts, with all necessary sanitary arrangements, having been built and the camp placed under a military guard, the healthy persons were, after careful medical examination, moved into it from the infected village. Before being allowed to enter the Health Camp all persons and their belongings were most carefully disinfected by European subordinates under medical supervision. * * * * After removal to the Health Camp only two cases of plague occurred among these people. * * * * No local case occurred in the Kiamari Health Camp.' The two cases appear to have been due to infection from outside, workmen being attacked who were permitted to leave the camp by day on passes and were disinfected before re-admission at night.

"9. Two more examples may be given, in conclusion, from Sukkur:—

> 'On the 17th April a quarter of New Sukkur known as Gharibabad, where 106 cases had occurred in the previous three weeks, was surrounded, and the inhabitants *en masse*, to the number of about 600, were conveyed, with their goods, poultry and domestic animals to two camps of huts made of railway sleepers. Of these 367 were taken to the Gharibabad Health Camp. One case was found in this camp on the day of removal, and not a single other case occurred during their stay of one month. It may be mentioned that 5 cases and 2 corpses were found in the Gharibabad quarter on the day the inhabitants were removed.

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* NOTE.—The Municipal Health Officer's figures differ slightly, and he shows one case on March 30th.

'Exact information cannot be given regarding the remaining 215, who, being railway employés, and their families were sent to a Railway Loco camp, which contained 1,100 persons, among whom from first to last 6 cases and 4 deaths occurred.'

"10. The following is quoted from the report of the Sukkur Plague Committee:—

'A second case worth recording is that of the* Limji Charhi people. This neighbourhood was also badly infected for at least a fortnight prior to the 26th April, 4 and 5 cases occurring daily among a somewhat limited population. * * * * The residents of this quarter were removed *en masse* on the 26th April to a camp specially set apart for them. * * * * Not a single case occurred amongst them for the month they were in camp, and since their return to their quarter they have been absolutely free from infection. The number of persons removed was 232.

'On the day of their arrival in camp their clothes and bedding were disinfected by boiling; rags and dirty bedding were destroyed * * * and their beds and furniture disinfected with perchloride solution.'

"11. Examples might be multiplied. At the New Sukkur Segregation Camp 11 cases and 7 deaths occurred among 529 people drawn from the most virulently infected parts of Sukkur Town. In the report of the Plague Committee it is stated that of these cases

1	occurred	1	day after	admission.
1	do.	2	days	do.
4	do.	4	do.	do.
1	do.	5	do.	do.
1	do.	6	do.	do.
1	do.	7	do.	do.
1	do.	11	do.	do.
1	do.	13	do.	do.

The last case was a doubtful one.

"12. The examples which have been given are those which point most conclusively to the efficacy of segregation after disinfection and supervision in stopping plague in an infected population. Enquiries are still in progress regarding cases which may have occurred under similar conditions after ten days' residence in camp. The evidence that plague does not incubate more than a few days is so strong that it may be considered that cases like the one that occurred after 11 days in the New Sukkur Segregation Camp are capable of explanation, and the simplest seems to be the supposition that in such cases the infection was taken from a previous case in the camp.

"A further report will be submitted as soon as possible dealing with cases of over ten days."

* A small quarter in New Sukkur Town.

From the GOVERNMENT OF INDIA to the SECRETARY OF STATE FOR INDIA.

(Sanitary No. 25.)

MY LORD,

Simla, 4th November 1897.

WE have the honour to send for Your Lordship's information the following further narrative of matters connected with the plague, in continuation of the account contained in our Sanitary Despatch No. 24, dated the 7th October.

2. In the city of Bombay the situation remains about the same and the disease has not increased in virulence. The total number of cases reported during the month of October was 290; this gives practically the same daily rate as during the second-half of the month of September. The number of cases during the second-half of October was only slightly greater than the number during the first-half of the month. The percentage of these cases which terminated fatally was 61—an improvement on the percentage (76) for September. During the three weeks ending the 19th of October, the total mortality from all causes in the city was 2,226 as compared with an average of 1,489

during the corresponding period of the previous five years. During the preceding three weeks (ending the 28th September) the corresponding figures were 2,461 and 1,479 respectively.

3. The following is a list of the places in the Bombay Presidency now chiefly affected with the number of cases reported from each during the month of October (up to the 30th) :—

Satara District	3,841
Poona City	1,346
Poona District	558
Cutch State	464
Surat District	432
Palanpur State	240
Nasik District	203
Sholapur District	161
Ahmednagar District	138
Thana District	79
Kolaba District (including Janjira State)	68

The condition of the Satara district has become even worse than before, Poona City shows an alarming increase in the number of cases, and in Surat, Sholapur and Ahmednagar the disease has gained ground. On the other hand, the districts of Poona and Nasik show a great improvement, and Cutch State and Thana district a considerable improvement. In Kolaba matters remain about the same. Over the whole month the results in the Palanpur State are approximately the same as in September, but the cases have been more frequent in the second than in the first half of October. In Ratnagiri district the disease has again died out, and very few cases have been reported of late from Baroda territory.

The scene of worst infection has again shifted in the Satara district, and Supne, Masur, Karve and Kale, all situated in the Karad Taluka, are now the worst localities. Godnadi, in the Sirur Taluka, continues to be the most infected place in the interior of the Poona district, but even there the disease has greatly declined. In the districts of Nasik, Surat and Thana, the places principally affected continue to be Igatpuri, Surat and Kalyan respectively. In the town of Surat the disease has considerably increased, whilst in both Igatpuri and Kalyan the number of cases shows a marked decline. In the Sholapur district the epidemic is confined to the town of Sholapur, and in the Ahmednagar district, Javla and Ahmednagar Cantonment are the seats of the malady.

4. On the 24th of October we telegraphed to the Government of Bombay again pressing urgently on the Governor in Council the suggestion, which we had first made on the 21st September, that a committee of officers with practical experience in dealing with plague should be formed to proceed to centres where outbreaks occur, with a view to aiding local authorities with their advice in dealing with it. It was explained in the telegram of the 24th October that Madras had become an infected port within the terms of the Venice Sanitary Convention, and that the state of affairs in Poona City and Satara to the south, and in Palanpur in the direction of Northern India, constituted a grave menace to the country outside the Bombay Presidency. We expressed our readiness to give the services of Surgeon-Major-General Cleghorn for at all events the month of November, and suggested that Mr. A. Wingate, who, as Acting Commissioner in Sind, had gained great experience in the administration of measures to combat the plague, should be appointed President of the Commission. The Government of Bombay replied on the 26th of October accepting the suggestion that a Commission should be appointed with Mr. Wingate as President, and asking that Surgeon-Major-General Cleghorn should join as soon as possible. They also stated that they proposed to appoint Surgeon-Colonel Hay to be the third member of the Commission, and that the services of Surgeon-Major A. V. Anderson and Dr. Reade would be at the Committee's disposal. Mr. Wingate has already joined his appointment and has visited Palanpur, and Surgeon-Major-General Cleghorn left Simla on the 1st instant.

5. It was stated in paragraph 4 of our Despatch of the 7th October that the Government of Bombay were considering a report submitted by a committee of experienced officers appointed to devise, if possible, further means of preventing people from leaving infected localities and entering other places until suitable precautions have been taken with respect to them. The outcome of this consideration was the issue by the Government of Bombay, on the 5th October, of a set of rules to control the egress of persons from

infected localities. A copy of these regulations, together with a letter addressed by us to the Government of Bombay on the subject, is appended to this Despatch.* Broadly, the rules are intended to prohibit persons from travelling from infected localities to other places without a pass granted by the plague authority appointed for the purpose, and they provide that if it is considered necessary the pass shall not be granted until the person has been disinfected and detained under observation in an observation camp. The rules further explain generally the circumstances under which passes may be granted without previous detention, and permit certain classes of persons to travel without passes. With regard to the particular case of railway traffic the rules prohibit booking within fifteen (the distance has by a more recent notification of the Bombay Government been increased to 20) miles of the infected locality, in the cases of persons who have not (*a*) a pass, if they come from the infected locality, or (*b*) a certificate from the village officer that they have been residing in the village and have just left it, if they come from a locality outside the infected area.

After a careful consideration of these rules we were constrained to point out to the Government of Bombay that their general tenor was such as to give an indirect encouragement to land quarantine, and that the plague authorities charged with working them might easily, unless their action were carefully supervised, utilise them for the imposition of such quarantine. In writing to the Bombay Government we have again alluded to the grave objections which, as Your Lordship is aware, we have from the outset taken to the imposition of land quarantine, and observed that this view had been endorsed by the recent Sanitary Conference at Venice, and must be strictly followed by the authorities in India. We further stated that it was incumbent on the Government of Bombay to make arrangements to ensure that no action is taken under the rules which would amount practically to the imposition of land quarantine.

We also considered that the form of the rules was open to objection, inasmuch as it exempts from their operation certain classes of persons, such for instance as Europeans and Government and Railway servants, and, with the sanction of the District Magistrate, their families and attendants. We are totally opposed to any interference with the ordinary avocations of persons who are not sick or suspicious, but in our opinion it is wrong to exempt special classes of persons from the operation of the rules. The principle which should govern the rules is that they should apply to all classes, but that detention should be enforced only in the case of such persons as are, in the exercise of the wide discretion which should be entrusted to the responsible officer, considered suspicious.

In addition to the above criticisms we considered it necessary to state our conviction that these elaborate rules for the control of the movement of people from infected localities will be powerless to check the spread of the disease unless they are accompanied by stringent measures to suppress the malady within the infected areas. In the absence of such measures the compulsory detention of the inmates in infected localities will, in our opinion, tend to foster the growth of the epidemic, and to establish plague *foci* whence the disease may not improbably spread with even greater virulence than if no measures had been devised to prevent the egress of the inhabitants. We therefore impressed upon the Government of Bombay that the most important object to aim at is not the control of the movement of the people, but the adoption of such well devised and stringent measures as will prevent the occurrence of plague cases from engendering fresh dangerous plague centres, whence the infection will certainly spread in spite of all efforts to confine it. Experience has shown that the measures upon which reliance may be placed to effect this end are in outline—

(1) The prompt detection of cases by (*a*) search parties, and (*b*) better registration of deaths.
(2) The removal of the sick to segregation hospitals.
(3) The detention in segregation of healthy occupants of infected houses.
(4) The evacuation of infected quarters.
(5) The cleansing and disinfection of infected houses and quarters.
(6) General sanitary improvements, such as the abatement of overcrowding and the improvement of ventilation and drainage.

We have asked the Government of Bombay for an assurance that these precautions are being generally and thoroughly carried out.

6. We regret to have to report to your Lordship that we have just been informed that twelve cases are reported to have occurred at Kotri, a small town in the Karachi district, about 100 miles from Karachi. We have not yet received intimation as to how

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* Not reprinted.

this place became infected. We have also to notice the detection during the month of October of seven isolated cases outside the Bombay Presidency—two in Rajputana, one in the Central Provinces, and four in the Presidency of Madras. The cases which occurred in Rajputana were reported on the 10th and the 11th—one from Abu Road, and the other from Jodhpur; and the case from the Central Provinces was reported from Kutni on the 21st. All three cases were detected at railway inspection stations. The occurrence of cases at Madras itself has already been notified to your Lordship. The four cases which occurred in the town and Presidency were all connected with one another, and the disease had been in each case contracted at Poona. The first case occurred at Madras itself. The patient was admitted to the General Hospital on the night of the 6th October and died on the morning of the 7th. He was the servant of a gentleman who had arrived a few days previously from Poona, and he was not detained at any railway inspection station, but there is no reason to suppose that he was suffering from any symptoms of plague before he reached Madras. The second case was that of a horse-keeper, intercepted on the 7th at the inspection station at Arkonam, in the neighbourhood of Madras, and the third a native, who was discovered to be suffering from plague at the inspection station at Guntakal on the 8th. Both these persons belonged, it is said, to the same party from Poona as the servant who died at the Madras Hospital. The fourth case was that of a sweeper in the Madras General Hospital, who died on the 15th October. He had attended at the post mortem examination of the first case. The approved precautions with regard to disinfection and segregation were adopted, and there has been no further diffusion of the malady. As we telegraphed to your Lordship, the occurrence of the two cases at Madras was notified to Foreign Governments, and further intimation was sent after the expiry of ten days from the fatal termination of the last case.

7. Fifty cases of plague have occurred at Kankhal near Hardwar during the present outbreak, but the disease has not spread beyond that place. To this Despatch is appended a copy of correspondence with the Government of the North-Western Provinces and Oudh containing an account of the cases and the measures adopted to stamp out the disease and prevent its spread.* These measures have been well devised and are being carried out with promptitude and vigour. The Lieutenant-Governor reported on the 16th of October that nine *foci* of plague had established themselves in the town, which contains about 6,000 inhabitants. The blocks in which these *foci* are situated have been evacuated and are in process of disinfection house by house. The inhabitants have been segregated in camps, and arrangements are also being made to house in fresh camps as many more of the inhabitants as may become necessary. Segregation hospitals (public and private) have been provided for the plague-stricken, including huts for the attendants on the sick; and segregation huts have been prepared for the use of persons who have been in close neighbourhood to sufferers from plague. The attitude of the people is obedient and helpful, and practically no opposition has been encountered. Every effort has been made to promote the good feeling of the inhabitants.

8. This fresh outbreak of plague in the immediate neighbourhood of Hardwar and the increased virulence of the disease in the Bombay Presidency have both brought into prominence the danger which exists at present from the assemblage of large numbers of pilgrims at Hardwar. On the 29th of September, in issuing regulations for the conduct of operations in the Hardwar Union, the Government of the North-Western Provinces and Oudh made the following rule for the control of visitors from the Bombay Presidency:—

> All pilgrims and visitors from the Bombay Presidency, excluding Sind or other place infected with plague, coming to Hardwar by rail or road shall reside in the camp at Hardwar provided for the purpose, where provision has been made for their accommodation. They shall be permitted during the day to visit the town, shrines and bathing *ghâts*, but must cook their food and sleep in the camp at night. Such visitors shall be liable to medical inspection from time to time.

At the instance of the Local Government a notification was issued in our Home Department under the Epidemic Diseases Act, on the 11th of October, prohibiting booking to and from Jawalapur, the railway station in the immediate vicinity of Kankhal, until further notice. The Local Government hoped by this means to keep pilgrims away from the infected quarter. On the 19th of October the Local Government telegraphed that two fairs were to be held shortly at Hardwar—one on the 25th October and the other on the 9th of the present month. Though unwilling to suggest the stoppage of the pilgrimage, the Lieutenant-Governor strongly recommended that it should be discouraged during one month by directing all railways not to run special trains for the conveyance of pilgrims to Hardwar on account of the recrudescence of plague in the Bombay Presidency.

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* Minute of a Conference held at Hardwar on 16th October only reprinted.

This recommendation of the Local Government was accepted and a notification was also issued on the 23rd October under the Epidemic Diseases Act, directing that no tickets to travel by railway to Roorkee, Landhaura, Laksar, Pathri, Jawalapur and Hardwar should be sold from that date until the 16th of November. Arrangements have been made to grant passes to Government servants, students of the Roorkee College returning on the close of the vacation, Europeans, and other persons who evidently are not pilgrims. In view of the great diminution in the attendance which these measures will effect, and of the healthy condition of Hardwar itself, the Lieutenant-Governor expressed his opinion on 21st October, that the absolute prohibition of the fairs at Hardwar was not necessary, but asked for authority to enforce entire prohibition should Hardwar become infected. We were, when we received this expression of the Lieutenant-Governor's opinion, about to suggest that the Lieutenant-Governor should consider the propriety of stopping fairs at Hardwar, if matters did not in the meantime improve. It was too late to issue a prohibition against the fair of the 25th October, but it appeared to us that the notices issued by the Local Government might possibly remove the hardship in prohibiting the fair of the 9th November, and we stated that if the Local Government came to the conclusion that this or any subsequent fair should be prohibited, the Government of India would have no objection to the issue of orders to that effect. We also informed the Government of the North-Western Provinces and Oudh that pilgrims should be prevented from going to Kankhal, a visit to a temple in which is regarded by many as an important part of the pilgrimage, and that an endeavour should be made to discriminate between pilgrims from Sind and pilgrims from the Bombay Presidency, who were being treated in the same manner, and that only the latter should be lodged in the observation camp. The Government of the North-Western Provinces and Oudh replied on the following day that it was feared that the temporary prohibition of fairs might be necessary, but that before adopting this step the Lieutenant-Governor wished to secure the acquiescence of the prominent Hindu leaders. It was also stated that there were local difficulties in the way of discriminating between Bombay and Sind pilgrims and that lodgment in the observation camp did not occasion any substantial hardship. The Lieutenant-Governor promised however to endeavour to reconsider the matter.

9. We regret to state that an outbreak of plague has occurred at the village of Katkar Kalan in the Nawshahr Tahsil of the Jullunder district of the Punjab. The existence of plague in this village was brought to the notice of the Deputy Commissioner on the 16th of October, and the news was confirmed by the Civil Surgeon who went to the spot. The disease is alleged to have been imported from Hardwar as far back as May last. Several deaths are said to have occurred in May and June, and the malady again broke out at the end of September. Forty-two cases occurred between the 17th and 29th October, and on that day twenty-two patients were under treatment. Since the 22nd October there have been fifteen deaths. The Sanitary Commissioner of the Punjab has gone to the village to superintend the operations for stamping out the epidemic. The village has been evacuated and the inhabitants segregated in camp.

10. In two telegrams, dated, respectively, the 25th and the 26th October, the Chief Commissioner of Ajmere-Merwara reported that a religious and cattle fair was to be held at Pushkar in the Ajmere district early in November, and suggested that in view of the existence of plague at Palanpur the booking of railway tickets from Palanpur and neighbouring stations to Ajmere and neighbouring stations should be prohibited from the 1st to the 11th of November. We have issued a notification under the Epidemic Diseases Act in our Home Department, dated the 29th October, directing that no tickets to travel by railway to Ajmere and certain neighbouring stations should be sold between the dates specified, at Roho (on the northern border of the Palanpur State) or any station on the Bombay, Baroda and Central India Railway and the Rajputana-Malway Railway south of Roho, to any pilgrim or other person intending, or believed to be intending, to attend the Pushkar Fair. The Chief Commissioner has also requested Local Governments and Native States to warn intending pilgrims against visiting the fair, and issued a notification stating that the cattle fair and horse show would not be held.

11. In a telegram, dated the 23rd October, we stated, in reply to Your Lordship's telegram of the 21st, that the chief inspection stations on the lines of railway had been continuously maintained with a view to preventing the spread of plague from the Bombay Presidency, that some subsidiary stations had been abandoned when the epidemic declined, but that special orders had been issued on the 14th October to Local Governments to maintain the original measures for the inspection of railway passengers in their entirety.

These orders were issued in view of the recrudescence of plague in the districts of the Bombay Presidency. The inspection stations, both major and minor, are now in full working order, except the stations for the examination of travellers from Sind, which were abandoned when Sind became free from plague. It will be necessary, we fear, to resume these now that cases of plague have been reported from Kotri. With our Despatch of the 7th October we forwarded a list of the inspection stations: to this despatch is appended a map showing the position of those stations along the lines of railway communications.* We also forward for Your Lordship's information a copy of correspondence with the Government of Bengal* in which we negatived a suggestion made by that Government for the imposition of quarantine at various points on the railway lines from the Bombay Presidency, and insisted on the importance of maintaining a surveillanee at their homes of travellers from the Bombay Presidency.

12. Appended to this Despatch is a letter (No. 5380, dated the 4th October 1897)* from the Government of Bombay, and enclosures, submitting a draft of rules, framed in accordance with the principles of the Venice Convention, for the treatment at Aden of vessels arriving there from ports declared to be infected with plague. We have signified our approval of the rules.

13. In conclusion we forward, for Your Lordship's information, copies of the more important resolutions* recently issued by the Government of Bombay on matters connected with the plague.

We have, &c.,
(Signed) ELGIN,
&c., &c.

Enclosures.

TELEGRAM No. 2341, dated Simla, 24th October 1897.

From the Secretary to the Government of India, Home Department, to the Secretary to the Government of Bombay, General Department.

Please refer to my telegram No. 2166 of 21st September and your reply No. 1571–P. of 23rd idem. Madras has now become an infected port within the terms of Venice Convention. State of plague in Poona City and Satara District to south and in Palanpur in direction of Northern India constitutes grave menace to country outside Bombay Presidency. Government of India understand that suggestion as to Committee was only discarded owing to paucity of officers and they would desire to press it urgently again upon consideration of Governor in Council. They are prepared to give Bombay Government services of Cleghorn at all events for month of November upon such a Committee and think that with him and Anderson Medical Department could be suitably represented. If Bombay Government could also appoint Wingate as President and some other executive officer from Bombay Presidency or Sind who has had plague experience, Government of India think that Committee would be fully representative.

TELEGRAM No. 3867–P., dated Bombay, 26th October, 1897.

From the Secretary to the Government of Bombay, General Department, to the Secretary to the Government of India, Home Department.

Your 2341, 24th. This Government accept suggestion. Plague Commission with Wingate President and Cleghorn as member. They consider it very desirable that Surgeon-Colonel Hay also should be a member. He knows Presidency and its officers and the present arrangements. If additional member desirable can be added later. Cleghorn should come as soon as possible. Governor is communicating with Lieutenant-General commanding about Hay. Wingate starts on tour immediately. Anderson and Reade will be at disposal of the Commission.

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* Not reprinted.

Extract from the Proceedings of the Government of Bombay, General Department No. 5673—3644-P., dated Bombay Castle, the 16th October 1897.

Letter from the Chairman, Poona Plague Committee, No. 2747, dated the 8th October 1897 :—

"I have the honour to report that, in view of the increase of plague in Poona City, as shown by the marginally noted figures for each day since the present operations by the two military search divisions began, the Poona Plague Committee is of opinion that it is advisable to increase the number of military search divisions, with a view to more effective discovery and isolation of cases as they occur.

Date.	Indigenous. (Poona City only.)	
	Cases.	Deaths.
28th September	13	15
29th do.	12	6
30th do.	17	10
1st October	7	8
2nd do.	8	6
3rd do.	14	10
4th do.	12	8
5th do.	12	6
6th do.	19	18
7th do.	18	15
8th do.	16	12
Total	148	114

"2. The number of military search divisions should, if possible, be six, as in March-April last. With this number the whole city can be searched in five days.

"3. In order to form four divisions in addition to the two already employed, there will be required—

4 Commissioned officers.
4 Non-commissioned officers.
At least 2 commissioned Medical officers. (1 to every two divisions.)
40 British soldiers.
80 Native soldiers.
12 Sappers.
16 Sowars.

"The Committee will make its own arrangements for native gentlemen, lady searchers, lady doctors, segregation squads, burying parties, and disinfecting and limewashing.

"4. It is most necessary that qualified medical men should be supplied to work with the search divisions. It would be better if there were one with each division ; but at least one with each two divisions is indispensable. Without one the search divisions cannot work ; and the Committee is not able to supply one.

"5. The first requisite therefore is at least two commissioned medical officers.

6. The number of officers and men required is taken on the same scale as that on which the existing search divisions are framed. Should it not be found possible to provide so many troops for this duty, the Committee considers that so many divisions should be formed as it may be possible to form, maintaining the present constitution of a division. With three divisions the whole city can be searched in ten days, with four in eight and with five in six.

"7. There are, however, portions of the city which are lightly infected or not at all, and others which are severely affected, especially Sadashiv Peth. These quarters would require more frequent searching than the others, and it would be possible to work with four divisions, or even three, searching the more heavily-infected quarters frequently at irregular intervals and the rest of the city only occasionally. Many cases are discovered by the Assistant Health Officers independently of the search parties ; and some few come of their own accord to hospital.

"8. Whatever arrangements may be made as to an increase in the number of search divisions, the Committee desires to again draw the attention of Government to the great need which it is at present experiencing of an additional commissioned medical officer, and to express the hope that means may soon be found of supplying this serious want."

Minutes of a Conference held at Hardwar on the 16th October 1897.

PRESENT.—His Honour the Lieutenant-Governor. Mr. G. R. C. Williams, I.C.S., Commissioner of the Meerut Division. Mr. E. F. L. Winter, I.C.S., Collector of the Saharanpur District. Mr. E. A. Kindall, I.C.S., Assistant Collector in charge of the Roorkee Sub-Division. Surgeon-Colonel Warburton, Inspector-General of Civil Hospitals. Surgeon-Lieutenant-Colonel S. J. Thomson, Sanitary Commissioner. Surgeon-Captain Chaytor White, Deputy Sanitary Commissioner. Surgeon-Captain Elphick, Civil Surgeon of Saharanpur. Surgeon-Captain Scotland, on special duty at Hardwar. Mr. G. E. Coles, Executive Engineer, Ganges Canal. Mr. W. H. L. Impey, I.C.S., Secretary to Government, Sanitary Department.

In the first week of September 1897, certain rumours reached the Collector and Civil Surgeon of Saharanpur that acute fever, quickly followed by death, had made its appearance in Kankhal, a town of some 6,000 inhabitants, situated on the right bank of the Ganges and one of the three towns comprising the Hardwar Union Municipality. Upon receipt of the information, the Collector (Mr. Winter) and the Civil Surgeon (Dr. Elphick) visited Kankhal, and made an inquiry into the correctness of the rumour which had reached them, directing their attention more particularly towards the ascertainment of concrete instances of the suspicious deaths to which reference had been made. The result of the investigation was to lead them to believe that merely deaths from the usual malarial fever prevalent at this time of the year had occurred. On the 16th September the Sanitary Commissioner received a telegram from the Assistant Surgeon in charge of the Hardwar Union Municipality, that a suspicious case, supposed to be plague, had been detected in Kankhal, and that the patient had been removed to the plague hospital, which had been kept up from the time of the outbreak in April, for the treatment of such cases. The Civil Surgeon (Dr. Elphick), who had also been informed of the occurrence by the Assistant Surgeon, came to Kankhal on the 17th September, and satisfied himself that the case was a general case of plague. It was accordingly reported as such to the Government.

During the previous outbreak in April and May last only case of true plague occurred in Kankhal, although there were some reasons to suspect that rats had largely died in that town. The disease however completely disappeared, and for several months no case of death from plague was brought to notice either among the inhabitants or rats in Kankhal, although careful watch was kept in the town. The medical authorities, however, think that the disease may have lain dormant during the rains, and that the present outbreak is merely a recrudescence. On the other hand, there appears to have been communication between Bombay and Kankhal during the rains, and it is not impossible that by that means the town may have become re-infected.

In accordance with instructions issued by the Government the Sanitary Commissioner (Surgeon-Lieutenant-Colonel Thomson) and the Collector proceeded to Kankhal, arriving there on the 21st September, and have remained there since up to date. The Commissioner (Mr. Williams), who reached Hardwar on the 22nd September, has visited the town at frequent intervals since.

2. Between the 16th September (on which date the first ascertained case of plague occurred) up till 12 o'clock to-day (16th October), there have been 31 cases, which have been distributed practically over the greater portion of the town of Kankhal, but have been concentrated at certain points which may be regarded as *foci* of the disease. They have been so grouped together as to form seven definite centres of the disease which have been made the basis of the proceedings subsequently taken for the evacuation of infected localities. Leaving for the present the question of establishment, which will be immediately reverted to, the proceedings followed by the Sanitary and Executive officers were as follows :—

The first step taken was to segregate the sick, and then friends and attendants, and to completely disinfect the houses in which plague cases occurred. But these measures proving ineffectual to stop the disease, it was decided to quarantine the whole town and to procure the evacuation of whole portions of the town in which the disease had shown itself or effected a lodgment. Accordingly the town of Kankhal was placed in quarantine and surrounded by guards, with orders to permit no one to enter or leave the town without the permission of the Magistrate. In case of persons wishing to leave, they will be required to pass ten days in the observation camp provided for the purpose. Some delay was caused in preparing the camps.

6. In regard to the general organization for dealing with the outbreak no improvement has to be suggested in the general system or scope of the arrangements now in force, with the exception of the possible extension by way of precaution of disinfecting operations to the towns of Hardwar and Jawalapur (in which the disease has not appeared). But the subordinate establishment and the officers on the spot are overworked, and it is necessary therefore to strengthen the staff. One tahsildar and three Naib tahsildars have been specially deputed for work in the town, and selected patwaris are called in to assist in carrying out the operations. Mr. Kindall, the Assistant Magistrate in charge of the Rurki Sub-Division, will now be temporarily relieved of the work of Sub-Divisional officer and will be placed on special duty at Kankhal, another officer being sent in his place to Rurki. In the absence of the Sanitary Commissioner, the Deputy Sanitary Commissioner will control the medical and sanitary operations, and another commissioned medical officer will be stationed temporarily at Kankhal. This will give three commissioned medical officers for the Hardwar Union Municipality. At present the following subordinate medical staff is employed :—

——	Assistant Surgeons.	Hospital Assistants.	Compounders.	Dais.	Vaccinators.
Kankhal	2	10	2	3	2
Jawalapur	1	2	...	1	3
Hardwar.	1	1	1	...	5
Total	4	13	3	4	10

This staff is considered to be sufficient at the present time, but in view of the possible extension or appearance of new *foci* of the disease, and the great necessity of having on the spot sufficient expert staff to deal with such possible increase of sickness, the Lieutenant-Governor has decided to make immediate arrangements for doubling the disinfection gangs, and to this end 10 more Hospital Assistants and one additional Assistant Surgeon will be deputed to Kankhal.

7. Coming to the executive subordinate staff, ten gangs are now employed on disinfection work in Kankhal, each gang being composed of 16 men (kahars, beldars, bhistees and sweepers) in charge of a medical subordinate (Hospital Assistant or compounder). These gangs are employed on the evacuated blocks of buildings in the infected areas. They commence work at the house in which the case of plague occurred, taking the neighbours' houses next in hand, and gradually enlarging the circle. They first remove all property from the house in the presence of the owner: they then proceed to burn all worn out mats, chappars, rags and destructible articles of little value after such things have been valued by a committee of native gentlemen. Compensation is given in case of hardship. The house is then thoroughly cleaned and disinfected, the walls, floors and roofs being washed with a solution of perchloride of mercury (1 in 1000) Furniture and articles of value are taken out in the sun and treated in the same way. This procedure is followed systematically from house to house in the infected block, and in course of time the disinfection operations will be extended to every house in the town. The increased establishment now ordered will permit of this disinfecting process being even extended to blocks in which the disease has not yet appeared, and thus have, it is hoped, a salutary preventive effect. Power is left to the local officers to increase these gangs still more, should circumstances call for this.

8. The work of guarding the town of Kankhal and of preventing ingress and egress, is done at present by a force of police and chaukidars, including 92 chaukidars who have been withdrawn from villages in the neighbourhood, substitutes being temporarily employed in their place. In the same way many of the police officers have been withdrawn from police stations in other parts of the district; the services of these men can no longer be utilized and they must be sent back to their respective police stations. The Lieutenant-Governor has decided to make up the force employed at Kankhal to 15 mounted constables and 100 constables, with the necessary complement of head constables. The exact number necessary to make up this total has been now reported by the Collector, and the Inspector-General of Police has been requested to supply the men required.

9. No special disinfecting or conservancy staff is at present employed at the neighbouring towns of Hardwar and Jawalapur. The Collector will, as a precautionary measure, cause conservancy staff of those towns to be strengthened so far as, in conference with the Deputy Sanitary Commissioner and Medical Officers on the spot, he may consider expedient, reporting his action for the information of Government.

10. Inasmuch as objections are known to exist to the practice of taking specimens from the bodies of persons who are believed to have died of plague, and as there is no longer any doubt as to the nature of the disease, diagnosis of the medical officers having been confirmed by the bacteriological examinations already made, it was decided by His Honour that in order to meet the wishes of the people, such specimens should only in future be taken in cases occurring in Kankhal and in which in the opinion of the medical authorities bacteriological examination is necessary to solve an important and doubtful point, and to serve a purpose of practical utility. In the case of rats or monkeys suspected of being infected with the disease, specimens should be taken and sent to Mr. Hankin for examination.

11. On the 25th October, the Somnoti Amavas Fair will be held at Hardwar, and on the 9th November the Pur an Mashi. It is clear that it is to the general interests to discourage the influx of people to Hardwar, which is only one mile distant from Kankhal, on these occasions, although for reasons which need not be recorded, no direct prohibition is advisable. Moreover a visit to a temple at Kankhal is considered by certain people as an important part of the pilgrimage. The discouragement should take the form (1) of the issue of orders prohibiting the running by any railway of special trains for the conveyance of pilgrims to Hardwar for a month from this date, and (2) of the issue of notices in the newspapers and Government Gazettes of these and other Provinces, warning people of the danger they run in coming to Hardwar, and advising them to keep away. Finally, the subject of the danger of infection spreading to Hardwar, through the visits of pilgrims from the Bombay Presidency, was discussed. As the establishments are unable to discriminate pilgrims from the Bombay Presidency proper from pilgrims from Sind, it was decided that all pilgrims from the Bombay Presidency should be required, as before, to occupy the camp provided for their accommodation. The Government of India will also be addressed with a view to the booking of pilgrims from the Bombay Presidency to any station on the Hardwar branch line beyond Laksar, being stopped for one month from the present date.

From the GOVERNMENT OF INDIA to the SECRETARY OF STATE FOR INDIA.

(Sanitary, No. 27.)

Dated Calcutta, the 9th December 1897.

MY LORD,

In continuation of our Sanitary Despatch No. 25, dated the 4th November 1897, we have the honour to forward, for Your Lordship's information, statistics showing the progress of the plague during the month of November last, and the following further narrative of matters connected with the plague.

2. During the last half of November the number of reported seizures and deaths from plague in the City of Bombay increased considerably, the figures for the first and second halves of the month being as follows :—

	Seizures.	Deaths.
1st half	148	108
2nd half	223	144

The returns for the whole month show 371 seizures and 252 deaths against 290 seizures and 178 deaths in the month of October. The general mortality on the other hand diminished during the month, the total number of deaths from all causes having been 2,974 compared with 3,389 in the month of October. This is the lowest figure that has been reached since June last. The percentage of plague cases which terminated fatally was 68 against 61 and 76 in the months of October and September respectively.

3. The following statement shows the places in the Bombay Presidency proper

where plague is now most prevalent and compares the number of reported seizures during the months of November and October:—

	November.	October.
Satara District	4,549	3,841
Poona City	2,534	1,346
Sholapur District	1,123	161
Surat District	855	432
Poona District	763	558
Cutch State	336	464
Nasik District	262	203
Belgaum District	194	5
Ahmednagar District	161	138
Palanpur State	152	240
Kolaba District (including Janjira State)	74	68
Kolhapur State	47	7
Thana District	33	79
Baroda State	27	33

These figures unfortunately show a considerable increase in the extent and virulence of the plague. The increase has been mainly confined to the southern part of the Presidency. The rise has been more or less considerable in the Satara District, Poona City, the Poona District, the Sholapur District, the Belgaum District, the Kolhapur State, and the Ahmednagar District. Further north the number of cases has increased in the Surat District, and in a less degree in the Nasik District, but the outbreak in both areas is comparatively mild. A marked improvement has occurred in the Palanpur State and cases in the Thana District have become scarce. The epidemic in the villages of Cutch has also largely decreased. In Kolaba District and in Baroda the cases are few and the position has not undergone any marked change.

In the Satara District the epidemic shows no signs of abating. During the five weeks ending the 26th November plague was endemic in 84 places, the Karad Taluka being the chief seat of infection. In Poona District also the disease is widespread, and is endemic in nearly 40 places. The virulence of the disease shows, however, some signs of abating, and considerably fewer cases were reported in the second than in the first half of the month. In the City of Poona also the disease is now not quite so severe as during the middle of November. When it was at its height the virulence of the infection was so great that it ceased to confine itself to the more insanitary and crowded portions of the town and caused a number of deaths amongst the servants of Europeans. In the Sholapur District the disease is practically confined to the town of Sholapur, where the rise in the number of cases has been rapid and large. The worst outbreak in the Belgaum District is in the Cantonment. Nandras and Nagaum are the seats of the disease in Kolhapur. In Surat District, Surat itself continues to be the place most affected. In Nasik District the chief seat of infection has shifted to the town of Nasik.

4. During the past month the Plague Commission appointed by the Government of Bombay have visited a number of places in the Presidency and have given much useful advice for the improvement of the arrangements. Surgeon-Major-General Cleghorn continues to act as a Member of the Commission. He has forwarded for our information several memoranda addressed by the Commission to the Government of Bombay describing the places they have inspected, the suggestions they have made, and the improvements that have been effected. Copies of these memoranda are appended to this Despatch for Your Lordship's perusal.

The memoranda deal chiefly with—

(*a*) The arrangements for combating plague at Poona, Sholapur, Hubli and Belgaum.

(*b*) Inspection and detention of passengers at Wadi Railway Station in Hyderabad.

(*c*) The protection of the city of Bombay from passengers coming from Poona and other infected localities.

(*d*) The arrangements for disinfecting the clothing and baggage of passengers at Hotgi Junction on the Great Indian Peninsula Railway.

Another memorandum written by Dr. Cleghorn discusses the arrangements at Palanpur and Surat, and at the Ujjain and Rutlam Railway Stations in the Central India Agency.

A note prepared by Mr. Wingate, the President of the Commission, on the general principles which should be followed in dealing with outbreaks of plague is also forwarded with this Despatch.

The Commission found the arrangements at Poona defective, and they have caused a more systematic and better system of administration to be introduced. At Sholapur active measures were taken at an early period of the outbreak to remove the inhabitants from the infected locality and settle them in temporary shelter. The Commission considered the arrangements to be excellent. They were equally satisfied with the arrangements at Hubli. At Belgaum the Commission made a number of very useful suggestions to the Plague Committee and praised the arrangements for the evacuation of the infected houses.

The Resident at Hyderabad has been addressed on the subject of the serious defects discovered at the Wadi inspection station.

For the protection of the City of Bombay against re-infection, the Commission considered that observation camps should be established at Kalyan (on the Great Indian Peninsula Railway) and at Palghar (on the Bombay, Baroda and Central India Railway). They recommended the disinfection of clothing and baggage likely to carry the seeds of infection, and the detention under observation of persons from infected localities who have not a fixed residence where they can be watched in Bombay.

The Commission brought to the notice of the Government of Bombay that the arrangements for disinfecting baggage and clothing at Hotgi Junction were defective. They have also suggested an increase in the number of disinfection stations, and some change in their position.

It may be here remarked that the clothing and baggage of suspicious persons is also disinfected at Jubbulpore and Itarsi in the Central Provinces, and that instructions have issued that this should also be done at the principal inspection station at Bandikui in Rajputana.

5. In Sind, plague has not spread beyond Kotri, where, however, it still exists. The outbreak has so far been kept in check. Forty-four cases were reported during the first half of November, and 29 cases during the second half of the month. In consequence of this outbreak, the inspection of passengers and disinfection of baggage is again carried out at Khanpur, the principal inspection station for the Punjab, and travellers are also inspected at Sharigh in Baluchistan.

6. Suspicious deaths believed to be due to plague have recently been discovered in four adjacent villages in the Sirohi State in the south of Rajputana. The cases occurred among refugees from Poona and their connections. The Agent to the Governor-General, the Administrative Medical Officer and the Resident are on the spot, and the suspected villages and the surrounding country are being carefully watched. Previously, on the advice of Dr. Cleghorn, two hospital assistants had been sent to Rajputana to assist in maintaining a watch over the villages on the southern border of the agency, and the Agent to the Governor-General has again been warned that a careful and systematic watch should be maintained. No suspicious cases have been detected outside the four villages, and no suspicious case in these villages since the inhabitants have been camped out in the open.

7. Eighty-six cases of plague were reported from the Jullundur and Hoshiarpur Districts during the month of November, *viz.*, 6 in Khatkar Kalan (Jullundur), 26 in Jhander Khurd (Hoshiarpur), and 54 in Khankhanan (Jullundur). These three villages are situated close to one another. The outbreak at Khatkar Kalan, the occurrence of which was reported in paragraph 9 of our Despatch of the 4th November, has practically died out, but an isolated case was repored on the 5th instant. Nine cases were reported from Jhander Khurd on the 10th November; measures were taken similar to those which were enforced at Khatkar Kalan and have been successful. The disease never gained ground and is dying out. The last case was reported on the 30th November. The outbreak in Khankhanan is more recent, and the number of cases continues to be comparatively considerable, though it is now happily diminishing. The following cases have been reported from the 1st to the 7th of this month :—

1st	9 cases.
3rd	13 ,,
5th	6 ,,
6th	5 ,,
7th	8 ,,

Khankhanan is a village containing a population of nearly 3,000 inhabitants who are chiefly Jats. The measures adopted are the same as those taken in the other two villages, namely, the evacuation of the village and the segregation of the inhabitants in a camp of temporary huts, under the guard of a cordon of police. A very strong staff of executive and medical officers is on the spot, and there is every reason to hope that the carefully controlled measures will be successful in stamping out the disease.

8. No case of plague has been reported from Kankhal since the 10th of November; the evacuation of the infected areas and the segregation of the inhabitants in camp have again been successful in stamping out the disease. On the 17th November the prohibition against booking to Roorkee and other stations in the nighbourhood of Hardwar ceased to have effect, except in the case of Jawalapur Station.

9. Special attention has been paid during the past month to the arrangements for inspecting travellers from the Bombay Presidency along the lines of railway communication, with a view to guard, as far as possible, against the danger arising from the increase in the virulence of the epidemic in the Bombay Presidency. The Government of Bengal has issued orders for the opening of three new principal inspection stations and observation camps on the frontiers of the Lower Provinces—one at Chausa, on the East Indian Railway, in the direction of Shahabad, a second at Mairwa, on the Bengal and North-Western Railway, in the District of Saran, and a third at Chakardharpur, on the Bengal-Nagpur Railway, in the District of Singhbhum. The following new principal inspection stations have been established in Madras and Hyderabad:—

Madras	Hospet	Southern Mahratta Railway.
Hyderabad	Lingampalli... ...	Nizam's State Railway.
	Gulburga	Great Indian Peninsula Railway.
	Mulkapur	Great Indian Peninsula Railway.

In Rajputana an increase has been made to the staff of European medical officers for the purpose of platform inspection at the railway stations of Ajmere and Mount Abu.

10. Measures to prevent travellers by rail from evading inspection and detention by re-booking have been under the consideration of the Government of India and the Local Governments. There is reason to believe that this practice has, as was to be expected, considerably increased. On the 6th November the Government of Bengal reported that the East Indian Railway Administration had represented that through-booking from Bombay and the neighbourhood to stations beyond Khana had declined by more than fifty per cent. owing to passengers from infected areas booking to stations on the Great Indian Peninsula and Bengal-Nagpur Railways, and re-booking thence to their destination. The Bengal Government made a suggestion that had been put forward by the Government of the North-Western Provinces in February last, that tickets of a distinctive colour should be issued at stations within the infected area in order that all travellers from the infected area might be at once recognised wherever they might alight. A similar suggestion was made by the Resident in Mysore. In February the suggestion was negatived by us on the ground that it would tend to encourage re-booking with a view to get rid of the distinctive ticket, the object of which would soon become generally known. Although travellers have taken to re-booking it seemed to us that the issue of tickets of a distinctive colour would still further encourage them to do so. The expedient would also be of little use under existing conditions; plague has become so widespread in the Presidency proper that it is no longer possible to distinguish travellers from infected localities within the Presidency from those who come from non-infected localities, and the only safe course is to regard all travellers from the Presidency as coming from the infected area. The Government of Bengal and the Resident of Mysore were informed of this view. At the same time the Chief Commissioner of the Central Provinces, through whose territories the Great Indian Peninsula and the Bengal-Nagpur Railway lines run on their course to Calcutta, was informed of the facts reported with regard to re-booking, and he was requested to cause a careful watch to be maintained at railway stations to prevent travellers from evading detection at their destination by alighting at an intermediate station for the purpose of re-booking. We directed that, if a passenger alights for this purpose, his name and other necessary particulars should be telegraphed to the station to which he has re-booked in order that he may be detected on arrival, and that to prevent such passengers from evading detection by alighting at a station short of the station to which they have re-booked, travellers should not be allowed to alight at stations other than those to which they have booked unless they can give a satisfactory reason for

so doing. The Government of the North-Western Provinces and Oudh was informed of the discussion and the orders. The Chief Commissioner of the Central Provinces issued a revised set of regulations on the 23rd November for dealing with travellers from the Bombay Presidency, rules 8 and 9 of which embody the instructions described above. Revised plague regulations issued by the Government of Bengal on the 10th November also contain rules devised for the same purpose, which are worked through the agency of the railway, town and rural police. We are at present considering what further precautions can be taken.

11. Before quitting the subject of the precautions adopted along the lines of railway communication, we would invite Your Lordship's atttention to the letter of the Government of the Punjab, No. 1211, dated the 24th September, and its enclosures which form the twenty-first enclosure to this Despatch.* They contain very interesting reports on the excellent arrangements made at the Khanpur Station in the Bhawalpur State (the main inspection station for the protection of the Punjab) for the inspection of travellers, the detention under medical surveillance of suspicious persons, and the disinfection of travellers' baggage and clothing.

12. In paragraph 10 of our Sanitary Despatch No. 20, dated the 21st July 1897, we gave Your Lordship a summary of our correspondence with the Government of Bengal on the subject of the remodelling and revision of the plague rules in Bengal with special reference to the segregation of the sick, and of persons specially exposed to the risk of infection. It was not at that time considered necessary to issue any fresh rules as the abatement of plague in the Bombay Presidency had greatly reduced the danger to which Calcutta and Bengal had been exposed. With the recrudescence of plague in the Bombay Presidency the situation again changed, and the Government of Bengal asked our sanction to the issue of a well-devised set of regulations which it had framed on the lines of the rules in force in the North-Western Provinces and Oudh. We agreed with the Government of Bengal that it had become necessary to issue the new rules, and they were accordingly published with the Resolution of the Government of Bengal, No. 1465 T.—M., dated the 10th November. The rules and the correspondence connected with them are appended to this Despatch.† With regard to the question of segregation, His Honour the Lieutenant-Governor, after considering the alternatives of home segregation and segregation in hospital, came to the conclusion that home segregation could not be permitted on a large scale as "it would multiply the so-called 'hospitals' to such an extent that no effective control could be exercised over the intercourse of plague patients and suspects with uninfected members of the community." The regulations therefore authorize the Health Officer to cause all sufferers from plague to be removed to hospital. But in order to show all possible consideration to the feelings of the upper classes of the native community, the establishment of private hospitals is authorized "for particular castes, classes, joint families, or associations of families," the equipment and administration of which must be approved by duly appointed authority. This is an extension of the private hospital system so successfully adopted in the City of Bombay. General Gatacre refused to permit the establishment of hospitals for families and groups of families. He had, however, to deal with an already virulent epidemic, whilst in Calcutta, and in Bengal generally, there is time to make beforehand all arrangements for the crisis, should it arrive. The experience of Bombay has also shown that there is no danger to be apprehended from the existence of a considerable number of plague hospitals in a large town provided they are properly managed.

Special powers are conferred by the rules for improving the sanitary condition of municipalities, and His Honour the Lieutenant-Governor has issued orders that these powers are to be used at once in the large municipalities of the Hooghly and Howrah Districts in the neighbourhood of Calcutta, which are said to be in a dangerously insanitary state.

The regulations also contain careful provision for watching the health of arrivals from the Bombay Presidency, of localities which have intercourse with that Presidency and of the country at large. The rules previously issued by the Government of Bengal did not pay sufficient attention to these very important matters.

13. A religious festival which is usually attended by pilgrims from all parts of India will be held at Vaikanta near Trichinopoly from the 24th of this month until the 3rd of January. At the instance of the Government of Madras we have caused a notification to be issued under the Epidemic Diseases Act forbidding the sale of tickets in the Bombay Presidency and Sind and in the Provinces in the north and centre of India from the

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* Notification prescribing regulations for inspection of persons, &c., only reprinted.

† Not reprinted.

10th to the 24th instant, to travel by railway to Trichinopoly and adjacent stations. We consider that the great danger of infection being spread by concourses of religious mendicants and other persons attending fairs and festivals, fully justifies the adoption of this course.

14. The twenty-five medical practitioners whom Your Lordship has procured for temporary service in India will at first be posted as follows :—

Bombay Presidency	13
Madras "	5
Bengal	7

Should plague break out in Calcutta, the Government of Bengal estimates that it will require twenty-five special medical officers for the province in addition to those who can be provided from provincial resources. The Government of Bombay have been informed that the twenty-five doctors from England are intended to be employed in Calcutta in the event of plague breaking out there. The Government of Bombay have also been asked to state whether they require any more private practitioners from England.

With reference to Your Lordship's telegram of the 15th November, we will state the number of women doctors and nurses whom it is desirable to engage in England as soon as the Local Governments have informed us of their requirements.

A number of Staff Corps and other officers who have passed in the native languages have recently been deputed to plague duty with a view to increase the strength of the supervising staff. The duties of a supervising plague officer are executive rather than medical and it is found that, with the assistance of medical subordinates, Staff Corps Officers are able to carry out the control of plague operations in a very satisfactory manner. Their experience of organization and discipline and their knowledge of the vernacular render them peculiarly fitted for the work. The following is the number of Staff Corps Officers who have recently been deputed to plague duty:—

Bombay Presidency	15
Bengal	3
North-Western Provinces and Oudh	5
Central Provinces	2

The absence of a large number of officers on the frontier makes it more difficult to depute officers for this special duty than would ordinarily be the case, but more officers will be sent to the Bombay Presidency as soon as possible.

15. To this Despatch are appended the papers which show the measures that are being adopted to carry out the decision sanctioned in Your Lordship's telegrams of the 13th and 19th November, that the pilgrimage to the Hedjaz may be permitted during the current season, subject to the provisos that pilgrims may not start from the Port of Bombay, and that no persons may go on pilgrimage from any part of the Bombay Presidency, except Sind. Orders to this effect were issued under the Epidemic Diseases Act on the 20th November. It was stated in the notification that as plague is widely prevalent in the Bombay Presidency, it is considered essential, in view of the strong opinion of all European Governments, including Turkey, regarding the danger of plague being communicated to Europe, and in view of the danger of plague being spread by intending pilgrims from infected to non-infected portions of India, that the pilgrimage should be subjected to careful restrictions. It was further stated that, although the pilgrimage was permitted subject to certain restrictions and safeguards, intending pilgrims would nevertheless be well advised in deferring their purpose until another season, in view specially of the stringent quarantine rules imposed by the Turkish Government, and the inconvenience and harassment to which it is likely they will be subjected on arriving in Arabia. Allusion was also made to the unsettled condition of the Hedjaz. Local Governments and Administrations were directed to take all possible means to make the purport of the orders immediately and widely known, and to cause the reasons on which they are based to be explained. Instructions were also given that every endeavour should be made to dissuade intending pilgrims from going to the Hedjaz this year.

Karachi in Sind and Chittagong in the Lower Provinces of Bengal are the only ports at which the embarkation of pilgrims will be permitted. The route *viâ* Chittagong is designed for the inhabitants of Bengal, Assam and the eastern portion of the North-Western Provinces and Oudh, and the route *viâ* Karachi for the inhabitants of Sind and of Upper India. The port of Chittagong was selected in consultation with the Government of Bengal because the conditions of the port are convenient, and because it is not situated near any large trade centre. All persons who persist in the desire to go on pilgrimage will be collected in camps of observation within the several provinces, where they will be detained under the careful superintendence of a Commissioned Medical Officer for at least ten days. Pilgrims who embark at Karachi will be sent direct to the port from the provincial observation camp, and pilgrims who embark at Chittagong will first be sent from the provincial camp to a central camp at Raneegunj, in the district of Burdwan in the Lower Provinces, whence they will be despatched to Chittagong under arrangements that are being made by the Government of Bengal. Intending pilgrims who have completed the ten days' observation period and are certified to be free from infection, will be sent to Karachi or Raneegunj, as the case may be, as soon as information is received by the Local Government concerned from Sind or Bengal that the authorities are ready to take them over. This will depend on the number of ships available and on the date on which they sail. The Government of Bombay have been asked to cause the arrangements to be made known to the shipping agents and pilgrim-brokers and to ascertain as far as possible what steamers will be available, when they will start and whether they will sail from Karachi or Chittagong. From the observation camps the pilgrims will be despatched by special train and under the charge of a responsible officer. As an additional precaution, the sale of tickets for passages to the Hedjaz has been prohibited except at the observation camps.

Pilgrims belonging to the Madras Presidency, the Hyderabad and Mysore States and the Hyderabad Assigned Districts will be collected in an observation camp in the Madras Presidency. They will then be despatched by rail to some port in the Madras Presidency (other than the port of Madras) and will proceed by sea to Karachi, transhipping at Bombay without being allowed to land. Pilgrims from beyond the Baluchistan and Punjab borders will be collected at the Baluchistan and Punjab camps.

We are at present in communication with the Government of Bombay with regard to persons from other parts of the country who have already entered the Bombay Presidency with a view to go on pilgrimage. It is undesirable to prevent them from carrying out their intention if this can be avoided, and it is proposed to allow them to sail from Karachi after passing the usual period of observation in a special camp in Sind.

16. In conclusion, we forward, for Your Lordship's information, copies of the more important Resolutions recently issued by the Government of Bombay on matters connected with the plague, and copies of some notifications issued by other Local Governments and Administrations under the Epidemic Diseases Act.*

We have, &c.,
(Signed) J. WESTLAND,
&c., &c.

Enclosures.

MEMORANDA BY THE BOMBAY PLAGUE COMMISSION.

Sholapore.

The first ascertained cases of plague occurred in quarters occupied by servants of the European officers, and were supposed to have been introduced from Poona. The disease subsequently spread to two neighbouring bazars, the police lines and ultimately to the town.

No indigenous cases have as yet been reported from the district.

As cases appeared in three different localities, a number of the residents migrated to adjoining districts and departures from the town took place on the first appearance of the disease in the two bazars. It is estimated that there is only one-third of the population, about 20,000, now left in the town; the greater number of the remaining 40,000 having departed before the city became infected.

Active measures were taken at an early period of the outbreak to remove the inhabitants from the two bazars and the police lines, and they were now comfortably settled in huts. A separate camp under the charge of Surgeon-Captain Leumann, with the usual arrangements, has been established for the city population.

The present arrangements are excellent, and, when fully organized on the arrival of the additional staff, will admit of every extension to meet all possible requirements.

The services of four Staff Corps officers have been applied for, and one Additional Assistant Collector is now being applied for, and these, with the assistance of the ordinary

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* Not reprinted.

District Officers and those lately employed on famine duties, will enable the Collector to place officers in charge of defined areas, and to carry out the work of searching for the sick in a thorough and systematic manner.

It is difficult at present to obtain early and correct information of cases of sickness, but with the additional staff, and particularly with the active and zealous assistance of the more influential citizens, it is hoped that the information required will be obtainable without resorting to harsher measures. Early information as to the occurrence of sickness is absolutely essential for preventing the spread of the disease, and such information must be obtained at all costs.

It is worthy of mention that the Agent of the Sholapore Cotton Mills is prepared to provide hutting accommodation for all the Mill employés and their families. The former numbers 1,700 hands, and it may be safely estimated that huts will be required to house about 7,000 people.

The Agent has, up to the present, erected 200 huts, and others are being prepared for new arrivals.

We attach a copy of a letter, No. 5401, dated 9th November 1897, from the Collector of Sholapore, making certain recommendations for the suppression of the disease, and applying for an additional loan of Rs. 25,000. We support his proposals, and suggest that sanction should be accorded to them by wire.

Not received; probably submitted to Government of Bombay.

Poona.

It has been suggested to us that restrictions should be placed on the booking of native passengers from Poona and the adjoining stations, as it is believed that Bombay City becomes re-infected by passengers from Poona and Satara.

It appears to us that a more effective method for protecting Bombay would be by the establishment of a disinfection station at Kalyan, where all native passengers from infected districts would be disinfected, with their clothing and personal effects. An officer of tact and experience should be appointed to supervise the operations, and he should be given discretionary powers to exempt individuals from disinfection, and, if necessary, to detain any passengers in an observation camp for any period not exceeding ten days. This would effectually meet the objection which has been raised, and would not seriously interfere with the necessities of the travelling public. It would protect Bombay from passengers arriving from Rutlam, Sholapore, Poona and Nasik Districts. And if a similar station was established at Palghar, protection would also be secured from passengers arriving from Surat and the infected districts in the North-West.

The inspecting staff at Kalyan would then, it is thought, be diminished as it would not be necessary to inspect all passengers on the platform, and the members would then be employed elsewhere.

To facilitate the arrangement the Railway authorities might be asked to reserve a certain number of carriages for passengers from Sholapore, Sullani and Poona.

The Plague Committee of Poona has undertaken the management of all operations in the City, Cantonments, Suburban Municipality and in Kirkee. These cover such a wide area, and contain such a large population, that the Committee, with the staff at its disposal, is unable to carry out those measures which, in our opinion, are necessary for the suppression of the plague. The disease is wide-spread, affecting not only those living under the worst sanitary conditions, but has also appeared with great virulence amongst the servants of the European residents, and nine individuals of pure European parentage, living under the best sanitary conditions, have up to date been attacked.

At the time of our visit, about six hundred persons were in segregation huts, who had been removed from infected houses, but taking into consideration the daily mortality, it is evident that all the people living in such houses had not been placed in the segregation huts. No attempt seems to have been made to remove people from insanitary houses, and the importance of thorough disinfection of suspected persons and clothing has evidently been insufficiently attended to.

The attention of the Committee has chiefly been directed to the city, and it has apparently not been able to avail itself, to any large extent, of the assistance which, no doubt, would be willingly given by the Military authorities. The members are thus placed at a disadvantage, and are unable to cope with the great amount of work which has been thrown upon them.

We would therefore propose that the Committee should be relieved of a large portion of its duties by placing the Cantonment with its bazars, the Suburban district and Kirkee under a Cantonment Committee composed of General Officer Commanding as President, and Surgeon-Colonel Fawcett and Major Ross as members. The Cantonment Magistrate to hold executive authority over Cantonment, Mr. Plunkett over the Suburban district, a military officer for Kirkee and Dr. Salaman for Yerrowda.

These officers would follow generally the instructions contained in the attached notes. Under such a Committee, Commissioned and Warrant Officers and Privates would be obtained in sufficient numbers for executive duties, and, if considered desirable or necessary, the organization could ultimately be extended to the city.

The General Plague Hospital contains about 460 patients, and the accommodation is being extended. The arrangements generally in connection with it are admirably managed under the control and supervision of Dr. Jones, but we consider that the aggregation of such a large number of plague cases in a limited area is not desirable, and may be followed by serious results. We would therefore propose that a separate hospital for females and children should be established in or near the city and placed under the charge of Miss Hunter.

Further relief will be given to the General Hospital by the establishment of one in Cantonments for the reception of cases occurring within the jurisdiction of the Committee whose formation we have proposed.

The relatives and friends of patients are not at present admitted into hospital, and the only means of communicating with the patients is by messengers entertained by the hospital. Such a procedure is liable to abuse; it is undoubtedly a great hardship and is in our opinion quite unnecessary. It is of course difficult to arrange for visits to patients in such a large hospital, but with a little management it would no doubt be accomplished by admitting at one time a limited number of relations, and allowing, say, 10 to 15 minutes for the interview. Such a concession would not only be humane, but it would also be highly gratifying to those concerned, and would tend to make the hospital more popular.

We would in this connection recommend that Dr. Jones, who has too many duties to discharge, should be removed from the Plague Committee, so that he may be able to give his whole time and attention to the management of the hospital. He would then be in a position to give advice and assistance, if needed, in establishing a Cantonment Hospital and one for women and children. No hospital for cases of plague should, in our opinion, contain more than about 100 beds, and we would strongly advise that immediate steps should be taken to carry out the recommendations regarding reducing the number of patients in the present one by the establishment of the two hospitals.

The following measures are recommended for adoption in addition to those detailed in Mr. Wingate's note of 27th October 1897, a copy of which is attached:—

1. The removal of the sick to a hospital situated at a convenient distance from the bazar.
2. Removal of all the inmates from the infected house.
3. Removal of the healthy from the infected quarter.

For the accommodation of these different classes it will be necessary to erect—.

(*a*) A hospital with the usual out-houses and quarters for attendants. The compound should be surrounded with a bamboo railing, and a guard of sepoys placed over it to prevent patients escaping.

(*b*) A camp for the segregation of individuals removed from the infected houses. The compound to be surrounded with a bamboo railing, and a sepoy guard placed over the building to prevent egrees of residents and ingress of unauthorized individuals.

(*c*) A camp for the healthy, the residents in which may be allowed to follow their daily business on condition that they sleep in camp.

(*d*) In connection with camp (*b*) separate huts should be erected for males and females, supplied with a suitable number of tubs containing disinfecting solutions for the different castes. Every one entering the camp to bathe in the solution, all their clothing and personal effects to be disinfected either in a boiling solution or by washing them freely with the cold solution.

(*e*) One or more huts for the segregation and observation of any individuals in camps (*b*) and (*c*) who show symptoms of illness. In the event of plague developing they should immediately be removed to hospital.

(*f*) The houses vacated by the removal of inmates to camps (*b*) and (*c*) to be thoroughly disinfected and whitewashed according to the instructions already issued. Openings to be made in walls of badly ventilated rooms and portions of the roofs to be removed.

(*g*) Those in camp (*b*) to be kept under observation for ten days; on the expiration of that period they may return to their houses after disinfection of clothes and personal effects unless a case of plague has occurred in the hut they occupied, when they should be kept under observation for ten days after appearance of last case.

Those in camp (*c*) to be allowed to return to their houses after disinfection of clothes and personal effects, five days after complete disinfection of their houses unless for any special reason a longer absence is considered necessary.

(*h*) The process of disinfection should be placed under the supervision of reliable and competent subordinates. The operation in the case of males to be superintended by warrant officers and of females by nurses or Native dhais.

It will be necessary to provide food supplies for camp (*b*) by agreement with a buniah. Both camps should be well lighted, and each should be provided with bathing platforms and latrines for both sexes.

The huts may be made 10 feet square, a space of 10 feet between each hut, and main streets to be 30 feet wide. Should a case of plague occur in camp, the hut should be at once evacuated and dismantled. The materials to be saturated with the disinfectant and exposed to the sun for two days.

They may then be utilized in the construction of a fresh hut on new ground.

To carry out the above measures so as to render them effective, it will be necessary to divide the bazaars into quarters. Each quarter to be placed under the charge of an European Superintendent, with a sufficient staff. Appointments to the latter should partly be made from the residents of the quarter, if possible, as their local knowledge will be found of great value and assistance in the discovery of cases of plague, and may render the employment of search parties necessary only occasionally or in exceptional circumstances.

A register of all individuals admitted to the two camps should be kept up to serve as a check on the individuals in residence.

We are of opinion that many of the houses in the Cantonment Bazaars are, as at present constructed, unfit for human habitation.

This is especially the case with those which are in close proximity to the middle of the three blocks in the Native Infantry lines. We would recommend that the Plague Committee should inspect all the buildings in these bazaars, and state their opinion as to the improvements to be effected in each, and the desirability of destroying some of the worst houses. With regard to the bazaar in the Native Infantry lines, it would seem desirable from every point of view that all the mud houses and temporary erections eventually should be entirely removed, as in their present state they must always be a source of danger, not only to the regiment in the vicinity, but to the whole community.

Belgaum.

Up to the 15th instant, only two cases of plague, both imported, have occurred in the town. Early information was obtained and immediate removal was effected. The other inmates of the two houses were also removed, and placed in segregation. Both houses were cleaned and disinfected.

The mortality in the town is reported to be particularly low at present, but there has been a considerable exodus of the inhabitants.

Thirty-one cases have been reported from the Cantoment Bazaar. These were confined to houses situated on low-lying ground, and all the houses in that quarter have been evacuated, and the inmates, to the number of 1,400, have been placed in huts, which have been erected on a wide and open expanse of sloping ground, at a distance of 2 or 3 miles from the bazaar.

The hospital, observation, ward and segregation sheds are situated at a short distance from the main encampment and the whole is guarded by a small body of police.

It is estimated that there are still about 7,000 people in the bazaar, but none of their houses have, as yet, been infected.

The roofs have been removed from all the houses vacated, and steps are now being taken to clean and disinfect the interiors.

These measures have been carried out, under the Plague Committee, by Major Minchin, the Cantonment Magistrate, and by Surgeon-Major Zimmerman, A.M.S.

The tact and exertions of the former officer in conducting the operations connected with the evacuation of the houses and in settling the arrangements in the camp, are deserving of the highest praise.

At a meeting of the Plague Committee, which we attended, we made the following recommendations:—

(1) That Surgeon-Major Zimmerman should be placed in entire charge of the camp, and should reside on the spot.
(2) That an European nurse should be attached to the hospital.

The necessary steps have been taken to place the services of Dr. Zimmerman at the disposal of the Plague Committee, and an application was forwarded to the Surgeon-General for an European nurse.

(3) That a sepoy guard should be placed over the camp containing the hospital and segregation huts.
(4) As the camp may become inconveniently large by fresh additions, we suggested that, in the event of it being necessary to turn out the inhabitants from any other portion of the bazaar, it would be advisable to establish a second camp, on a site at a more convenient distance from the bazaar. The original camp would thus be secured from further infection, and the inmates under such circumstances could then be permitted to return, as soon as possible, to their usual employments, returning to sleep in camp, until the houses in the bazaar have been thoroughly cleaned and disinfected—an important point, as all expenses of feeding, etc., are now paid from the plague funds.
(5) A proper system of disinfecting the clothing of all removals to camp has also been recommended.
(6) Instructions have been given to the Committee regarding the measures to be taken in the event of the town becoming infected, and for rendering more accurate the registration, and ascertaining the cause, of deaths, both in the town and bazaar.
(7) We suggested that the Cantonment Bazaar be divided into quarters, and each placed under the supervision of a regimental or other trustworthy official who would take the necessary steps for discovering the sick, for their removal and for the evacuation and disinfection of the houses. The organisation would be under the control of the Cantonment Magistrate, subject to the orders of the Plague Committee.
(8) The town should also be divided into four divisions and each placed under a Civil European officer, with the same powers as in the Cantonments.

From the 7th to 9th November, four sepoys of the Native Regiment were admitted into the Regimental hospital as suffering from remittent fever. They died in two or three days after admission, and as doubts were entertained of the diagnosis, the same precautions were taken as if they were cases of plague. No such fatal form of fever had previously occurred in the regiment, and it seems fair to conclude that they were really cases of plague, although none of the distinct symptoms were said to have been present. From the 12th to 15th three cases were admitted, which were undoubtedly plague, and were at once diagnosed as such. Of the seven cases, four were single and three married. Besides the wives, there were two children residing in the affected rooms, but none of them have, as yet, shown any symptoms of plague. Early removal of the sick, with the usual precautions in the houses infected, appears to have been effectual in preventing the spread of the disease.

It is probable that each case attacked contracted the disease in the neighbouring bazaar.

The two companies to which the patients belong have been moved into camp.

Inspection at Wadi.

Wadi is the junction for Hyderbad and is under the jurisdiction of the Nizam. It is within five hours by rail from Sholapore.

The arrangements at the station are conducted by the officials of the Nizam, and the orders issued to them are that all passengers from infected districts booked to any station on the Nizam's Railway are to be detained at Wadi for a period of ten days.

Passengers from non-infected districts to be detained for a period of 24 hours or until departure of next train.

Through passengers with symptoms of fever are detained until the nature of the illness has been ascertained.

The clothes of all patients admitted into hospital are disinfected in boiling water.

Lately a Military cordon has been placed from Naldrug across the border villages to prevent people from Sholapore entering the Nizam's territory.

The passengers detained as above are kept under observation in a long hut and partly in a portion of an adjoining serai. Both hut and serai are continuous with the village and the segregated mix freely with the villagers.

There is separate accommodation for the sick in a hut situated near the dispensary.

The staff consists of a European Medical Officer educated at the Hyderabad Medical School, a female graduate, and four hospital assistants.

Inspection and detention of sick are also carried out at Gulbarga, a station in the Nizam's territory situated between Wadi and Sholapore.

Passengers booking at Chitpur, one sation beyond Wadi in the Nizam's line, are also inspected by a medical subordinate. All passengers are again inspected at the station next to Hyderabad City.

The inspections and detentions at Wadi have apparently been in operation since 22nd February last, but during the absence of Dr. Lawrie the ten days' detention of passengers from infected districts was held in abeyance from 22nd August 1897 till 20th October 1897.

From 23rd October 1897 till the 11th instant, 282 passengers were detained from Bombay, 155 from Poona and 251 from Sholapore, or a total of 688.

Only one passenger with plague has been detected since February last. A patient with high fever was removed from the train which subsequently was found to be plague, but no intimation was sent to the railway authorities, and the carriage from which the case was removed was not withdrawn from running. Should a similar case again occur the number of the carriage should be noted and information forwarded to Madras.

When passengers are detained for ten days, it seems desirable that their clothing and personal effects should be disinfected, but no arrangements exist for doing so. In disinfecting with boiling water close supervision and a powerful fire are required to ensure continuous boiling when clothes are thrown into the boiler.

The present method of segregation will surely defeat the object aimed at, if segregation is considered necessary, then it should be carried out thoroughly.

We also visited Hotgi, a junction within half an hour by rail from Sholapore. The arrangements there are not satisfactory, but if our recommendations regarding the establishment of a disinfection station at Sholapore are sanctioned, Hotgi may be abandoned and the staff of an Assistant Surgeon, a Hospital Assistant and three pupils may then be employed elsewhere.

Hubli.

There are extensive railway workshops established here, the employés residing in barracks situated in close proximity to the workshops. These barracks are about a quarter to half a mile distant from the city, and were occupied by about 1,500 men, women and children.

The first case of plague was reported on the 17th October and occurred in one of the barracks occupied by a Punjabi, who, it was stated, had been on a visit to Sholapur. On the appearance of other cases, preparations were made for the eventual evacuation of the quarters. A hospital and observation wards were erected in one field, and segregation huts for the healthy in another. There was no vacant space in the immediate neighbourhood, and a sufficient area for the huts could only be obtained by removal of the standing crops.

Evacuation of the barracks was commenced on the 30th October, and was completed on the 13th November. The personal effects of all those removed to the huts were disinfected in the perchloride of mercury solution, and all rags and refuse were burnt. As each house or room was emptied, the door was, for the time being, securely fastened with screws and the whole roof removed.

On arrival in camp, a register was kept of the members of a family occupying each hut, and a cordon of police was placed around the encampment with orders to prevent all egress. A roll call was instituted every morning and an inspection made by railway officials of all residents.

There are now about 1,500 men, women, and children residing in these huts, 1,200 in one camp, 300 in another, and 55 in the segregation and observation sheds connected with the hospital.

Water is laid on to the larger camp, and wells are available for the others. Supplies are obtainable from *bunniahs*, who have opened shops in close proximity to each camp.

The total number of plague cases, which have occurred up to date, has been 26, 12 of which appeared in the barracks, 12 after removal to the huts, and 2 imported into the city from the railway quarters.

The disease from the first has been of a serious type, and the cases have ended fatally within a short time after the first appearance of the symptoms. During the time the people are under observation, the railway company pay them half wages, but as the different blocks pass the period of ten days without a case amongst them, the occupants will be permitted to resume their work. They will, however, continue to reside in the huts until the barracks have been thoroughly cleaned and disinfected. The necessary work in connection with disinfection will be commenced at once, but it will necessarily occupy some time, more particularly as we have recommended that the ventilation of the houses should be greatly improved so as to render them safe for re-occupation.

Two residents of the barracks went to live in the city, where they were discovered to be suffering from plague, and were promptly removed to the hospital. The houses which they occupied in the city were vacated, cleaned and disinfected. These are the only cases as yet which have been reported from the city. All deaths are certified, and there is no reason to believe that plague exists there at present, but, as an additional check, the Collector has been advised to issue orders for the registration of all funerals as they pass the octroi posts.

The arrangements which are now in existence have been, when they were decided on, promptly carried out, and are of ideal excellence. The system followed appears to be complete in all respects, and the Collector, his medical advisers, and the railway officials, who have given every assistance, must be congratulated on the success which has, up to the present, followed their efforts.

Several of the towns in Dharwar are very populous, and it is highly desirable that every legitimate means should be employed to prevent plague gaining an entrance into them. We have, with this object in view, suggested to the Collector that an inspection and disinfection station should be established here, at Gadag, and at a station to the west of Dharwar. Passengers booked for any station within Dharwar District from infected districts to be registered, and, if necessary, disinfected and kept under observation at all three stations.

If these measures, combined with medical inspection and disinfection of departures from Hubli station for ten days after discharge of last case of plague from hospital, are accepted, then we consider that the booking of passengers, which has for some time past been closed, should be re-opened.

Hotgi Junction, etc.

The arrangements here are not at all satisfactory. No orders appear to have been issued to the Medical Subordinate in charge, and the measures now in force are certainly not calculated to prevent the spread of the disease. All passengers are examined by one of the staff, cases of sickness are said to be detained, and all passengers, without discrimination, in possession of dirty clothes are also detained; such clothes are disinfected in a boiling solution of phenyle.

The abuses attending such a want of system are obvious, passengers give up their clothing in preference to detention, and in our presence, a man with his family, with a through ticket from Fyzabad in Oudh, was removed from the train and kept under observation merely for the purpose of disinfection of the dirty clothes of the party. The search is for soiled clothes and not for passengers arriving from infected districts.

The medical staff consists of a Civil Assistant Surgeon, a Hospital Assistant, and three medical pupils.

We have already suggested, in a previous communication, the establishment of a disinfecting station at Sholapur, where the disease is indigenous and beyond which it does not at present extend, and when the arrangements there are completed, the establishment at Hotgi should be removed and employed elsewhere.

It appears to us to be impossible to carry out inspection and disinfection in an efficient manner unless they are placed under the supervision of an experienced European officer. This can be easily done at Sholapur, and with European supervision abuses will be prevented. Besides, at Hotgi there are no means of obtaining supplies, should it be necessary in the future to detain any large number of passengers, the place is very small and isolated, and to introduce effective arrangements a competent staff would be necessary.

Arrangements at Sholapur would under the present conditions meet all requirements and there would be a certainty of efficiency.

Gadak.—Three imported cases have been detected at this station. All arrangements for the accommodation of cases, and for residents of infected houses have been completed and are capable of extension in the event of the disease becoming indigenous and spreading.

We met Dr. Anderson at Hubli, one of the officers placed at the disposal of Mr. Wingate by the Government of Bombay, and he has been directed to proceed to Naggar, as cases have again appeared in the Cantonment Bázaar after too early re-occupation of vacated quarters. After a few days stay there he will go to Palanpur and take charge of plague operations in that State.

Note on letter No. 8137, *dated the* 6*th November*, 1897, *from the Chairman, Plague Committee, Bombay, to the Secretary to Government of Bombay, General Department.*

We have been furnished with a copy of the above letter for an expression of our opinion on the proposal it contains with regard to the establishment of an observation camp in Bombay City for all arrivals by railway from infected districts.

We quite agree with Sir James Campbell as to the necessity for the adoption of preventive measures against the possibility of reinfection of the city, and accept the proposal that one or more camps are required for the segregation of suspected persons. We are, however, of opinion that the object aimed at would be secured, as far as this is practicable, by the establishment of one camp at Kalyan and of another at Palghur, on the Bombay and Baroda line. The former will arrest all passengers from infected districts to the north, east and south; and the latter, all those coming from Surat and Palanpur. Passengers by railway from all infected districts may then be kept under observation in each camp for a period not exceeding ten days from date of booking, the medical officer to exercise his discretion as to the period of detention, and also to place in segregation any other traveller whom he has reason to suspect as likely to convey the disease. Experience elsewhere has shown that it is not necessary to detain all individuals for the full period of ten days. It will, in fact, be found that in many instances a few days will be sufficient. It is in our opinion essential that the persons, clothing and personal effects of all those detained should undergo a complete system of disinfection.

Europeans and respectable natives with a fixed residence in Bombay should not ordinarily be detained in these camps. It will only be necessary for them to give their names and addresses in Bombay, particulars of which should be forwarded to the authorities in the city to enable them to arrange for visits of a medical officer to all such individuals.

The arrangements proposed by Sir James Campbell in connection with the formation of a camp inside Bombay for the segregation of arrivals by rail are, in our opinion, too complicated and of too harassing a nature to admit of success. The situation of the camps we now propose will ensure, so far as that is possible, the immunity of a wide area around Bombay City, and the transfer of the passengers to the camps will be an easy matter.

The objection that travellers from the Deccan will avoid Kalyan, urged by Sir James Campbell against a camp there, will equally apply to one in Bombay, because the passengers, under Sir James Campbell's scheme, would be segregated in carriages at Kalyan previous to removal to camp.

The evasion will be common to both, as to any system, the difficulty in each case may be overcome to a certain extent by having inspection at the causeways.

Enclosure No. 7.

Note by SURGEON-MAJOR J. CLEGHORN on his tour of inspection to certain Stations and Districts in the Bombay Presidency.

Note on Ujjain, Rutlam, Palanpur, and Surat.

Dated the 10th November, 1897.

1. *Ujjain and Rutlam.*—Passengers in trains coming from both directions are inspected at these stations. The work appears to be done efficiently, and there are hospitals and segregation huts near the stations.

2. In Ujjain suspected individuals are kept in segregation for seven days from date of departure from infected stations. At Rutlam all passengers for the city have to report at the dispensary for six days after arrival. Suspicious cases are detained in huts until the individual is free from all symptoms.

3. No difficulty has been experienced in carrying out these measures, and no case of plague has as yet been discovered.

4. *Palanpur.*—Visited on 4th November, a walled town with a population of 17,500, locally estimated at 25,000. The town is now completely evacuated and the houses are being systematically disinfected. The inhabitants have been gradually leaving the town during the course of the epidemic, and they have been permitted to do so, without any of them having undergone a period of segregation, and without disinfection of clothing. It is estimated that 4,000 to 5,000 of the population are now either encamped in the neighbourhood or living in houses outside the city walls. The huts occupied by the former are of a very simple character, and have been constructed by the occupants themselves. They have received no assistance from the State authorities.

5. The remainder of the population have either left the district, going southwards to Baroda or taken up their residence in villages within the State. They have, therefore, in all probability carried the disease with them, and most of the villages will, it is feared, become in time infected. Reports have already been received of the presence of the disease in four villages in Chundisar, population 2,388, situated 8 miles to the west of Palanpur on the Deesa line of railway. The first cases were reported on the 7th October; but from the number then recorded, it was evident that the disease had been present in the village for some time. I visited the place and found that more than one-half of the residents had left it, squatting near their fields, it was said, but this was evidently a mistake, as I could find none of them in the neighbourhood of the village. A second village, Koronder, population 3,426, from which reports of cases had been received, is situated 7 miles to the south of Palanpur. A third, Malan, population 2,588, situated 8 miles to the north-east of Palanpur, and a fourth, Marwara, population 3,426, situated 2 miles to south-east. It is highly probable that many other villages are also infected.

6. Lieutenant O'Brien, Assistant Political Resident, recently appointed, has been placed on plague duty in the district, and Mr. Wingate, who visited Palanpur on the 29th October, left instructions for his guidance. It is, however, impossible for one officer and Dr. Rainier to superintend the necessary operations, and Mr. Wingate has to-day wired to Government of Bombay, recommending that two Staff Corps officers should be sent to Palanpur and 30 sepoys from the regiment at Deesa. The latter are required, as the subordinates of the State do not insist on the orders being carried out.

There is not, I understand, any likelihood of the disease extending eastward, as the country in that direction is covered with dense jungle.

Towards the north, the country is sparsely populated, and the people of Palanpur State have little or no connection with the inhabitants of Rajputana, and they are not likely to travel by road in a northerly direction. Some of the Marwaris residents in the city have, however, travelled by rail to towns in Rajputana and the Punjab.

During the past fortnight all booking by rail at stations within the State has been stopped, except to 1st class passengers, and those who have been in segregation for seven days. This has practically put a stop to all travelling by rail. The ordinary passenger to obtain a ticket must either go to Sidhpur in the south, or Mount Abu in the north.

The disease is not of a very severe type, as of the 616 reported up to date, only 347 died, or a percentage of 56·3.

The percentage of deaths on cases under observation has been 69·0.

7. The medical staff at present consists of Dr. Rainier, one Civil Assistant Surgeon attached to the Agency, one State Assistant Surgeon and three Hospital Assistants. Arrangements are being made to entertain more Hospital Assistants.

The Agent to the Governor General of Rajputana may be asked, if he has not done so already, to place one or more Hospital Assistants to inspect the villages on the southern border of Rajputana, with directions to report the occurrence of any cases of plague to the nearest Residency Surgeon, or to the Administrative Medical Officer, Rajputana.

8. *Surat.*—The Collector of Surat has taken measures for placing the town under a number of Inspectors with a sufficient staff, and will carry out the necessary measures.

9. The Bombay Government have been recommended by wire to adopt strict measures of disinfection of passengers, &c., at Anand Junction, Manmad, Sholapore and Hubli Junction, and we have asked for authority to carry out such measures in direct communication with the local authorities.

10. We leave for Sholapore on morning of 8th instant, visiting other places on borders of presidency, and taking steps to try and prevent spread of the disease to adjacent territories.

J. Cleghorn,
Director General, Indian Medical Service.

Memorandum by A. Wingate, Esq., C.I.E., I.C.S., Plague Commissioner, Bombay Presidency, dated 27th October 1897.

Questions having arisen as to when booking of passengers by railway is to be stopped, it seems desirable to circulate a few remarks explaining the intention of Rule 1 of the Rules published with No. 5391—3495-P., dated 5th October, 1897, General Department.

The energies of the Plague Authorities of an infected place are directed towards preventing the sick getting away and so spreading infection. All other towns have to defend themselves against the infected place.

Confining attention to the railway, all departing passengers are to be carefully and individually inspected by a Commissioned Medical Officer at every train day and night. If this exceeds the power of the inspecting establishment, only such number of trains must be allowed to book passengers as the staff can successfully manage. If it is ascertained or suspected that people evade inspection by going by road, it is then necessary to stop booking at one or two stations on either side of the infected town.

The departure being thus under thorough control, so that it is absolutely impossible for any one with slighest suspicion of fever to depart, it rests with the platform inspections of trains at convenient points along the railway line, and with arrangements on the arrival of the passenger at his destination, to discover any subsequent development of fever.

The arrangements at departure must of course be thorough; carriages searched for any one in hiding, off-side of train locked or guarded, and so on. The persons rejected must on no account be allowed to leave the platform, but be immediately handed over to the police guard. One deterrent to sick travelling is the certainty that they will be sent to the hospital they are trying to evade. On the other hand, many detained are free from plague, and it has a bad effect to send such to hospital. An observation shed or house under close guard, and with neighbouring accommodation for relatives, is provided, and the inspecting officer can release as soon as the patient is free from fever. It is no use permitting departure earlier even if the fever is not plague, because the traveller would be stopped at the next inspecting station.

A further precaution where a town is badly infected is to permit no one to book till his person and clothes and baggage have been disinfected. As soon as this can be arranged, the infected place causes little risk in permitting booking.

Where the rapidity of the epidemic or want of establishments prevents these measures being effectually, methodically and carefully worked, all booking must be stopped except under passes. The quicker booking can be safely re-opened the quicker is the infected place emptied.

If booking is stopped, the roads leading from the town must be carefully watched for sick, for the exodus will seek the neighbouring villages, and they will all get infected. It is obvious that it is much easier to watch the stream of travellers by rail than by road.

Travellers who alight should be examined medically by any doctor or Hospital Assistant available, and if none such, the Mamlatdar should arrange for detention outside the town, permitting business to be done, but ensuring that the passengers sleep at the place appointed, and that no townsperson sleeps there. As soon as the organisation of Superintendents, of quarters and supervisors of streets is working well the sick are taken to hospital in the earliest stage, and the members of the family and of adjoining houses are segregated. Consequently the dangerous people cannot travel. The use of passes under good organisation is thus at a minimum. The test of success of the working of any Superintendent is that no deaths from plague occur in his quarter save from some explained cause. Every death occurs in hospital, and a well-managed town ought to have very few deaths from plague out of hospital.

From J. P. Hewett, Esq., C.I.E., Secretary to the Government of India, to the Resident at Hyderabad.

Home Department.
Sanitary.
No. 2588.

Calcutta, 4th December 1897.

Sir,

I am directed to forward, for your information and guidance, a copy of a note prepared by the Plague Commission* appointed by the Government of Bombay on an inspection of the arrangements in force at Wadi Railway Station for dealing with passengers from infected districts. (See page 103.)

* A. Wingate, Esq., C.S.
Surgeon-Major-General Cleghorn, C.S.I., Sanitary Commissioner with the Government of India.
Surgeon-Colonel G. W. R. Hay, M.D., Surgeon-General with the Government of Bombay.

2. It is stated by the Commission that orders have issued for the detention at Wadi of all passengers from infected districts booked to any station on the Nizam's State Railway for a period of ten days. These orders amount to the imposition of land quarantine which, as was stated in my telegram No. 2459, dated the 11th ultimo, and in the telegram from the Government of India in the Foreign Department, No. 4280 I.A., dated the 18th ultimo, is opposed to the policy of the Government of India and cannot receive their consent. The proper manner of dealing with travellers from an infected locality was explained in my telegram No. 2346, dated the 26th October. Travellers should not be detained indiscriminately, but the Inspecting Medical Officer should be given a wide discretion to detain any one considered to be suspicious. A liberal interpretation should be placed on this order, and all persons should be detained under observation who are suspicious either through their symptoms or through the dirty condition of their clothes or effects, or who travel in large bodies, or who belong to classes which cannot readily be traced on arrival at their destination, and cannot be relied on to give information of the occurrence of cases of plague amongst them. With regard to other passengers, an endeavour should be made to keep a watch upon them after they arrive at their destination, and I am to forward, for your information, a copy of a set of rules framed by the Chief Commissioner of the Central Provinces, which shows the manner in which this watch should be maintained. As a further precaution, every means should be used to keep a watch over the health of the threatened area, and to obtain the earliest possible information of the occurrence of any cases of plague. Appended to this letter is a copy of rules which are in force in the North-Western Provinces and Oudh, the Punjab and the Central Provinces for securing early news of possible cases of plague.† Experience has shown that there is little danger to be apprehended from isolated imported cases, provided that the matter is detected in time, and that the necessary steps are taken to prevent the case from spreading infection and establishing a new plague focus. When a case of plague is detected the sick should be treated in isolation, and those who have been in contact with the sick person should also

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† Not reprinted.

be isolated. The clothes and bedding of the sick person and all other articles likely to have been in contact with him, must be disinfected or destroyed, and the place in which the sick person has been residing must also be disinfected.

3. It is also pointed out by the Plague Commission that passengers from infected areas are not detained in segregation, but are allowed to mix freely with the villagers. The Commission state that this method will defeat the object aimed at, and that if segregation is considered necessary, it should be thoroughly carried out. The Government of India agree fully with this view, and they consider that the system of detention described by the Commission involves considerable danger of an outbreak of plague at Wadi. I am to request that arrangements may be made for the complete segregation of the passengers whom it is considered necessary to detain under observation.

4. In conclusion I am to state that the Government of India agree with the Plague Commission that the clothing and personal effects of the person detained under observation should be carefully disinfected. In the absence of this precaution the infection of plague may be spread by the clothing, &c., of travellers as readily as by the travellers themselves.

I have, &c.,
J. P. HEWETT,
Secretary to the Government of India.

GAZETTE NOTIFICATION.

The 10th November, 1897.

No. 1345.—*Notification.*—In exercise of the powers conferred by the Notification of the Government of India, No. 302, dated 4th February 1897, the Honourable the Lieutenant-Governor, being satisfied that the Punjab is threatened with an outbreak of a dangerous epidemic, namely, bubonic plague, and that the ordinary provisions of the law are insufficient for the purpose of preventing such outbreak, is pleased to prescribe the following Regulations for the inspection of persons travelling by railway, and the segregation of persons suspected of being infected with bubonic plague, and for other matters under sub-section (1) and sub-clause (*b*) of sub-section (2) of section 2 of the Epidemic Diseases Act, 1897, in supersession of the Regulations published with Notification No. 146, dated the 12th of February, 1897, as amended by Notification No. 634, dated the 8th of April, 1897 :—

I.—In the following Regulations—

"Place of inspection" means any place which may be notified by the Local Government to be a place of inspection.

"Inspecting Medical Officer" means a person appointed by an order in writing by the Local Government to be an Inspecting Medical Officer.

II.—The Local Government may notify any railway station or any place in the vicinity thereof to be a place of inspection, and may by order in writing appoint one or more Inspecting Medical Officers for the same.

III.—Every Inspecting Medical Officer who is unavoidably prevented from discharging all or any of his functions as such, may by order in writing appoint any Assistant Surgeon or Hospital Assistant temporarily to discharge such functions, and every Assistant Surgeon and Hospital Assistant so appointed shall, so far as such functions are concerned, be deemed for the purposes of these Regulations to be an Inspecting Medical Officer.

IV.—An Inspecting Medical Officer may at his place of inspection direct any person travelling by railway to remain in the carriage in which he is travelling, or to leave the carriage in which he is travelling and come on to the platform or on to the line, and may prohibit any such person from leaving the platform or any other portion of the place of inspection.

V.—(1). An Inspecting Medical Officer may at his place of inspection make a medical inspection and examination of any person travelling by railway in such manner and to such extent as he thinks necessary, in order to ascertain whether there is reason to believe or suspect that such person is or may be infected with bubonic plague: Provided that such inspection or examination shall not be made in any manner or to any extent to which such person objects.

(2.) An Inspecting Medical Officer may put to any such person any questions he thinks fit in order to ascertain whether there is reason to believe or suspect as aforesaid, and such person shall be bound to answer truly any question so put to him.

VI.—Where, as the result of such inspection or examination or otherwise, the Inspecting Medical Officer considers that there is reason to believe or suspect that any person is or may be infected with bubonic plague, or where any person makes any objection under the proviso to clause V, sub-clause (1), of these Regulations, the Inspecting Medical Officer may direct that such person be removed to and detained in any building, tent or other place, whether near the place of inspection or elsewhere, until the Inspecting Medical Officer or some other Medical Officer empowered in this behalf by a written order of the Local Government certifies in writing that in his opinion there is no longer any reason for believing or suspecting such person to be infected as aforesaid.

VII.—Any person in respect to whom a direction has not been given under Clause VI may apply to the Inspecting Medical Officer to be allowed to attend upon any person in respect to whom such a direction has been given, and the Inspecting Medical Officer shall, except for reasons to be recorded by him in writing, grant such application.

VIII.—Any person who has made an application under the last foregoing clause and whose application has been granted shall be detained in such building, tent or other place, whether near the place of inspection or elsewhere, as the Inspecting Medical Officer may direct until the Inspecting Medical Officer or some other Medical Officer empowered in this behalf by a written order of the Local Government certifies in writing that in his opinion there is no longer any reason for detaining such person.

IX.—No person in respect to whom a direction under Clause VI or VIII of these Regulations has been given shall leave any building, tent or other place in which an Inspecting Medical Officer has directed him to be detained until such Inspecting Medical Officer certifies in writing that in his opinion there is no longer any reason for believing or suspecting such person to be infected as aforesaid, or that there is no longer any reason for detaining such person, as the case may be.

X.—The Inspecting Medical Officer may order the destruction or disinfection of any article which is or has been in the possession of any person in respect to whom a direction under Clause VI or VIII has been given, or which is or has been in the possession of any person whom the Inspecting Medical Officer considers to have been in dangerous proximity to such person :

Provided that compensation may, in the discretion of the officer empowered by the next following clause to award the same be paid for the destruction or injury of any article under this clause.

XI.—Applications for the payment of compensation under the last foregoing clause may be made to the District Magistrate, who shall, upon receipt of any such application, determine by order in writing the amount of such compensation, if any, and such order shall be final.

XII.—The Local Government may determine in what cases or classes of cases any charges for the provision of accommodation, diet and treatment for persons detained under these Regulations, and any sums payable as compensation under them, shall be defrayed or paid by any Local Body : and such Local Body shall thereupon become liable to defray such charges or pay such compensation accordingly.

XIII.—In every case in which any charges are to be defrayed, or any compensation is payable under these Regulations, for which no Local Body is liable under an order issued under the last preceding clause or under any other law or rule having the force of law, such charges shall be defrayed or compensation shall be paid by the Local Government :

Provided that nothing in this clause shall be deemed to prevent the Local Government from recovering any moneys thus paid from any Native State or Railway Administration or Railway Company when such moneys are by agreement or otherwise so recoverable.

XIV.—The powers conferred on the Inspecting Medical Officer by these Regulations shall be exercised subject to the control of the Magistrate of the District, the Commissioner of the Division and of the Local Government.

H. J. MAYNARD,
Junior Secretary to Government, Punjab.

No. 890-T. M., dated Darjeeling, 29th September 1897.

From C. E. A. W. OLDHAM, Esq., C.S., Officiating Secretary to the Government of Bengal, Municipal Department, to the Secretary to the Government of India, Home Department.

As a number of pilgrims have applied to the Commissioner of Police, Calcutta, for permission to go to the Hedjaz this year, I am directed to request that, with the permission of His Excellency the Governor General in Council, the Lieutenant-Governor may be favoured with an authoritative interpretation of the meaning to be attached to the words "current season" which occur in paragraph 2 of Home Department Notification No. 625, dated the 20th February 1897. I am to add that the Medical Board are of opinion that it would be unwise to allow pilgrims to leave the country at present. They suggest that pilgrimage should be stopped till matters improve in Bombay and Poona.

TELEGRAM No. 2283, dated Simla, 15th October 1897.

From the Secretary to the Government of India, Home Department, to the Secretary to the Government of Bombay, General Department.

Please refer our Notification 625 of 20th February under Epidemic Diseases Act. Under terms of Venice Convention pilgrim-ships are allowed to depart from plague-infected port on certain conditions, but Government of India think that, in view of apprehensions of European powers, it would in any case be undesirable to permit pilgrimage from Bombay at present. Does Bombay Government see any objection to permitting pilgrims to go from Karachi, and do they consider that continuance of prohibition during present outbreak of plague is likely to be resented by Muhammadan community, or would they approve of continuance of prohibition of pilgrimage from Bombay Presidency proper or from infected part thereof if that is capable of definition ?

TELEGRAM No. 2284, dated Simla, 15th October 1897.

From the Secretary to the Government of India, Home Department, to the Secretary to the Government of Bengal, Marine Department.

Your letter No. 890-T.M. of 29th September. Does Goernment of Bengal consider that prohibition of pilgrimage during coming Haj, unless plague declines in Bombay Presidency, would be likely to be resented by Muhammadan community ?

TELEGRAMS Nos. 2285—2290, dated Simla, 15th October 1897.

From the Secretary to the Government of India, Home Department, to the Secretary to the Government of Madras, Local and Municipal Department. The Secretary to the Government of the North-Western Provinces and Oudh, Judicial Department. The Chief Secretary to the Government of Burma. The Chief Commissioner of the Central Provinces. The Chief Commissioner of Assam. The Resident at Hyderabad.

Please refer Home Department Notification No. 625, dated 20th February last, under Epidemic Diseases Act. $\frac{\text{Does Government of \_\_\_\_\_\_\_\_\_\_\_\_}}{\text{Do you}}$ consider that prohibition of pilgrimage during coming Haj, unless plague declines in Bombay Presidency, would be likely to be resented by Muhammadan community ?

No. 2291, dated Simla, 16th October 1897.

From C. H. A. HILL, Esq., Under Secretary to the Government of India, Home Department, to the Chief Secretary to the Government of the Punjab.

With reference to Home Department Notification No. 625, dated the 20th February 1897, suspending the pilgrimage to the Hedjaz during the last pilgrim season, I am directed to enquire whether, in the opinion of His Honour, the Lieutenant-Governor, a similar prohibition of the pilgrimage during the coming Haj would be likely to be resented by the Muhammadan community.

I am to explain that such a measure would not be resorted to in the event of the plague declining in the Bombay Presidency.

No. P.—1843-P., dated Poona, 12th October 1897.

From J. DeC. Atkins, Esq., Secretary to the Government of Bombay, General Department, to the Secretary to the Government of India, Home Department.

I am directed to forward a copy of the papers noted in the margin, and to enquire whether the Government of India would have any objection to opening Bombay again as a port from which pilgrim-ships may proceed to the Hedjaz in the coming season. I am to invite attention to the fact that special provision is made in the Venice Convention for the treatment of pilgrim-ships.

Letter from the Chairman, Bombay Plague Committee, No. 4919, dated 28th July 1897.

Letter to the Chairman, Bombay Plague Committee, No. 1317-P., dated 25th August 1897.

Letter from the Commissioner of Police, Bombay, No. 7149—21, dated 4th September 1897.

Letter from the Chairman, Bombay Plague Committee, No. 6572, dated 4th October 1897, with accompaniment.

No. 4919, dated Bombay, 28th July 1897.

From J. M. Campbell, Esq., Chairman, Plague Committee, to the Secretary to the Government of Bombay, General Department.

I have the honour to request the favour of being informed as to whether it is the intention of Government this year to allow the Haj to proceed from Bombay. My reasons for asking are that, if it is to be, I must arrange certain alterations as regards ventilation, water, etc., in a shed to the east of the existing pilgrim-shed at Malet Bunder. The present will only accommodate 250 pilgrims.

No. 1317-P., dated 25th August 1897.

From J. DeC. Atkins, Esq., Secretary to the Government of Bombay, General Department, to the Chairman, Bombay Plague Committee.

With reference to your letter No. 4919, dated 28th ultimo, I am directed to state that, before deciding whether a proposal should be made to the Government of India that the Haj should be allowed to proceed this year through Bombay, Government would like your opinion, after consultation with the Commissioner of Police, and such other officers as you may deem it desirable to consult, whether it would not be possible to form a pilgrim camp or depôt outside Bombay, perhaps at Kalyan (which would be convenient for both the railways) or at some place above the Ghauts. The pilgrims from this camp might by special arrangement be railed to the pilgrim-ship and put on board without any contact with the townspeople of Bombay, thus doing away with the necessity of any detention in Bombay, or the erection of any extra sheds for the accommodation of the pilgrims in Bombay.

No. 7149—21, dated 4th September 1897.

From the Commissioner of Police, Bombay, to the Secretary to the Government of Bombay, General Department.

I have the honour to report, for the information of Government, that about 31 pilgrims have recently come down to Bombay in order to proceed to Mecca, and have put up at the new Musafirkhana.* Out of them 19 are from different parts of Sind, 2 from the Punjab, and 10 from Central Asia.

2. The Central Asian pilgrims are some of those that were sent in February last to Nasik and from thence despatched to Peshawar and Rawalpindi, where they have since remained.

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* **Musafirkhana=traveller's resthouse.**

3. It is now the time of year for pilgrims to come down to Bombay from all parts of India and from beyond the frontier to proceed on pilgrimage, and if it be the intention of Government not to allow any to proceed to the Hedjaz from Bombay this year, it would be as well that all intending pilgrims should be prevented from leaving their homes.

4. Under the circumstances, I solicit that Government may be pleased to pass early orders in the matter.

No. 897, dated Bombay, 2nd September, 1897.

From Surgeon-Major F. F. MACCARTIE, M.B., Health Officer of the Port, to the Chairman, Plague Committee, Bombay.

In acknowledging receipt of your memorandum, No. 5464, dated 27th August 1897, and forwarding letter No. 1317–P., dated 25th August 1897, from Secretary to Government, I have the honour to state as follows :—

2. The only point raised in Mr. Secretary Atkins' letter is the possibilty of forming a camp for Mecca pilgrims at Kalyan or other suitable site outside Bombay, from which they can be raised to the ships awaiting them.

3. There can be no doubt as to the possibility of forming such a camp which would only be a matter of expense and organisation. It should not be placed at Kalyan, where plague, I understand, is now prevalent.

4. The question of the advisability of the camp, would, however, also seem to require consideration. It is open to doubt whether the many difficulties and expense which may be incurred by the formation and maintenance of an extra urban camp can be sufficiently balanced by any compensating advantages arising from a possible lessening of the chances of conveyance of plague cases to Jeddah ; and as regards these difficulties, I would suggest that the Commissioner of Police and, through him, the Protector of Pilgrims, be consulted.

5. Amongst the many points requiring consideration is the question of food-supplies, which are usually only obtained in Bombay for the voyage just prior to sailing, and of tickets which will necessitate brokers, etc., from Bombay, mixing freely with the pilgrims in their camp. Again, the transfer of the pilgrims' kit (some carry enormous quantities, including heavy bags of grain) from the train to the ships will necessitate the use of many Bombay coolies, and the operation, which will require many hours for its accomplishment, must interfere much with the ordinary traffic of the docks. Moreover, the heavy baggage has, in accordance with the rules published under the Pilgrim-ships Act, to be delivered to the ship's commander, and registered by him on the day previous to departure. Thus the pilgrim, who, as a rule, become riotous when separated from his baggage, will have to give it up at Kalyan, or wherever the camp is, and see it disappearing into space one day at least before he can himself start for the vessel.

6. Under the circumstances, I am unable to see that any benefit will accrue from the formation of such a camp as has been suggested.

7. Should Government consider it necessary that pilgrims must be segregated in a camp before embarkation at Bombay, I would suggest that the segregation be carried out in Bombay itself. The Mody Bay Musafirkhana can in fine weather accommodate some 300 or 400 pilgrims ; and it, with a temporary camp created near it, should be sufficient for the requirements. The pilgrims can then be easily prevented from visiting the city, and food, baggage and ticket difficulties will be reduced to a minimum.

8. Moreover, as I would point out, the departure of pilgrims from plague-infected ports has been provided for in the Venice Convention Regulations, and special rules have been made to meet the contingency. It cannot be claimed that much good has resulted to India from that Convention if, when plague in the city is not even of epidemic character, the departure of pilgrims for Jeddah is only to be permitted under extraordinary conditions. As I would urge, there can be no reason, unless plague again becomes of epidemic intensity, why the pilgrimage from Bombay should not be allowed as in former years, when the pilgrim had free access to the city, and was only subjected to the ordinary rules under the Pilgrim-ships Act. The Venice Convention rules and the Government Resolutions here seem to me to furnish sufficient check against plague getting into the Hedjaz from Bombay.

On arrival in Bombay, the pilgrim can be, as he had been in former years, subjected to medical supervision at the various Musafirkhanas and lodging-houses in the city ; and this and the strict individual inspection on shore before embarkation should be sufficient to prevent the disease getting into ships ; while in the event of its reaching the vessels, the Venice Convention rules, which will be enforced at Camaran, should suffice to keep it from reaching Jeddah, and thus infecting the Hedjaz. It is not denied, I believe, that the plague which broke out amongst pilgrims at Jeddah in June last, and which did not attack any of the Hajees who had left Bombay during the year, was imported from the coast of Assir, where from Lohia to Leith, on the Western Coast of Arabia, plague has been endemic for years. In fact, the disease is much more likely to reach the Hedjaz from these places than from Bombay, even when this port is heavily infected.

9. Should these views not be accepted, I would urge that in preference to a camp at Kalyan or above the Ghauts, pilgrim departures should be made from Karachi, which is now, and it is hoped will continue to be, free from plague.

No. 6572, dated Bombay, 4th October 1897.

From J. M. CAMPBELL, Esq., Chairman, Plague Committee, to the Secretary to the Government of Bombay, General Department.

As directed in your letter, No. 1317-P., dated the 25th August 1897, I have consulted the Commissioner of Police, the Collector of Customs, and the Health Officer of the Port on the question of segregation camps for pilgrims. I have the honour to submit a copy of the report of the Health Officer of the Port with which the officers consulted and I are in the main in agreement.

2. In connection with these and former papers on the subject of the advisability of providing pilgrim camps, three points have been considered :—

(1) Up-country pilgrim centres.
(2) Segregation camps near Bombay.
(3) Segregation camps in Bombay.

On these points I agree with the views of the officers I have consulted. In our opinion, if it could be worked, a system of local up-country centres to collect pilgrims and pass them to Bombay in batches for a certain ship a few days before the sailing of that ship would be a relief to Bombay. The objections are that, in addition to the difficulty of collecting at local centres pilgrims who pass through as ordinary travellers to Bombay, up-country pilgrims in many cases take tickets by certain ships months before the date of starting. They therefore cannot, without serious complications, be arranged in batches which agree with the dates of sailing of the different vessels, especially as most dates of sailing are notoriously irregular. Further, the Commissioner of Police and the Health Officer of the Port agree that before sailing not less than three days are required in Bombay to check tickets and to make other arrangements. Such a detention would do away with most of the advantages of having up-country centres.

The difficulty in the way of a camp at Kalyan or other places near Bombay is that plague is as prevalent in the country round Bombay as it is in the city itself ; that at Kalyan or other small town it would not be possible for pilgrims to lay in necessary stores ; and that, as above stated, several days are required for preparations in Bombay before starting.

A suitable place for a segregation camp in Bombay has been found on the reclaimed land in Mody Bay, immediately to the west of the Messrs. Graham's bulk oil installation. This area is walled and is empty. The objections are :—

(*a*) The rent, Rs. 1,000 a month.
(*b*) The space. Enough for 1,000, not enough for the 2,000 or, according to the Protector of Pilgrims, even 3,000, which it occasionally might have to accommodate.

(*c*) The cost of maintaining the camp. This for 800 pilgrims, in addition to all initial cost of about Rs. 3,000 for sheds, may be roughly calculated :—

	Rs.	
Rent	1,000	a month.
Water, Conservancy, Lighting	500	"
Attendance	100	"
Food—Rs. 200 a day (4 annas a head) ...	6,000	"
Monthly Total ...	7,600	

NOTE.—The yearly average of outgoing pilgrims during the nine years ending 1896 has been about Rs. 14,000, or a monthly average of over Rs. 1,000. Further, the estimate of accommodation for 800 pilgrims cannot provide for more than a third of the number of pilgrims which, according to the Protector of Pilgrims, may be in Bombay at one time. In theory it might be possible to choose the 800 pilgrims who are the first to start and keep them under special supervision. The irregularity in the sailings of pilgrim-ships would in practice make any such arrangement impossible."

(*d*) The fact that, if this Mody Bay site is chosen, the pilgrims will embark from the now Mody Bay pier, and the very considerable expenditure at the Mallet Bunder Inspection Shed will to a great extent be thrown away.

In Bombay pilgrims for Jeddah who gather to rest-houses and other pilgrim lodgings have, within recent years, when cholera or plague has been epidemic, been under special medical supervision at the Musafirkhanas and rest-houses. In any time of epidemic sickness it would seem to be enough to increase the strictness of this ordinary supervision. The words of the Venice Convention are—" Where there is plague in the port, embarkation on board pilgrim-ships must not take place until the pilgrims collected in groups have been subjected to an inspection sufficient to ascertain that none of them are suffering from plague." Under the existing system, before embarkation, a supervision is exercised over the pilgrims more than the Venice Convention demands, while the strict medical inspection upon embarking required by the Venice Convention and previously under the new Pilgrim Act is carefully carried out. At the same time, to guard the good name of the port and to maintain the credit of the outgoing inspection, we are of opinion that the present medical surveillance of outgoing pilgrims in Bombay, especially strict when plague is either endemic or epidemic, should be continued.

3. As regards the existing system, it is to be noted that surveillance is one of the measures favoured both by the Venice Convention and by the Government of India. And that the serious practical objection to a system of general surveillance, namely, the difficulty of finding the holder of the surveillance pass, does not exist in the case of pilgrims who in Bombay are known and are prepared to submit to any inspection which may save them the risk of missing the pilgrimage.

4. Under these circumstances, I agree with the Commissioner of Police, the Health Officer of the Port, and the other officers I have consulted, that there is no necessity either for up-country centres or for segregation camps either near or in Bombay. Further, that the present system of medical supervision is sufficient, care being taken when plague or other disease is epidemic that the medical supervision is constant and thorough.

It is worthy of note that, during the past year before the pilgrimage was stopped when plague was raging in Bombay, of 4,831 pilgrims who left Bombay, so careful was the surveillance and so searching the inspection at the pilgrim shed before embarking, that only two infected cases passed, and that both of those cases died without infecting the ship. I venture to think that a system which in so difficult a time can show the results so nearly perfect may safely be continued in the present season of greatly reduced danger.

5. One point remains.

It may be argued by those in favour either of segregating pilgrims in Bombay or of preventing them entering the city that we have to consider the protection of Bombay itself as well as of Jeddah and the west. This argument is true. It may fairly be supported by the beliefs : First, that outsiders are more apt to catch plague than residents ; and, second, that up-country pilgrims, with their filthy habits, old age and bodily weakness, are specially susceptible to plague influences. These arguments, which are mainly founded on doubtful and theoretical considerations, seem to me to carry little weight against the opinion of the Health Officer of the Port that there is nothing so special in the health or mode of living of pilgrims as to make it necessary or even advisable to isolate them. Further, this opinion is fortified by the experience that last year, though about 5,000 pilgrims were in Bombay when plague was at its worst, remarkably few suffered from the disease.

On the strength of this experience I venture to hold that, at least in existing health conditions, so far as the health of Bombay is concerned, it is in no way necessary especially to isolate pilgrims who come from uninfected districts.

No. 2495 (Sanitary).

NOTIFICATION.

Simla, November 28, 1897.

In the Notification of the Government of India in the Home Department, No. 625, dated the 20th February 1897, it was ordered under the powers conferred by section 2, sub-section (1) of the Epidemic Diseases Act (III. of 1897), that the pilgrimage to the Hedjaz should be suspended for the season of 1897.

The Government of India do not think it necessary that the pilgrimage should be altogether suspended for the current season, but as plague is widely prevalent in the south and south-west of India, they consider it essential, in view of the strong opinions of all European Governments, including Turkey, regarding the danger of plague being communicated to Europe, and in view of the danger of plague being spread by intending pilgrims from infected to non-infected portions of India, that the pilgrimage should be subjected to careful restrictions.

The Governor General in Council is therefore pleased to cancel the orders contained in the Notification of the Government of India in the Home Department, No. 625, dated the 20th February 1897.

The Governor General in Council is further pleased to direct that until further orders no person, resident permanently or temporarily in the Presidency of Bombay, with the exception of Sind, the Presidency of Madras, the Hyderabad Assigned Districts, the Hyderabad State, or the Mysore State, shall be permitted to embark from any port in India with the object of making a pilgrimage to Mecca.

The Governor-General in Council is further pleased to direct as follows:—

(1) That no person shall be permitted to embark with the object of making a pilgrimage to Mecca, except at the ports of Karachi in Sind and Chittagong in the Lower Provinces of Bengal, and unless and until such person has been kept under observation in a place appointed for the purpose until such time as the Medical Officer in charge shall be satisfied that all risk of such person conveying the infection of plague has been completely abated; and unless such person is conveyed from the place of observation to the place of embarkation under the orders of an officer appointed for the purpose.

(2) That no passage tickets for the Hedjaz shall be sold, except at the places appointed for the detention of intending pilgrims under observation.

(3) That all persons who have entered the Bombay Presidency (excluding Sind), with the object of proceeding to the Hedjaz, shall be placed in a camp of observation until such time as the Medical Officer in charge shall satisfy himself that all risk of the occurrence of plague among them has been completely abated. They shall then be sent to their homes.

Although the Goverment of India has decided that the pilgrimage to the Hedjaz may be permitted subject to the safeguards enumerated above, they are nevertheless convinced that intending pilgrims will be well advised in deferring their purpose until another season, in view specially of the stringent quarantine rules imposed by the Turkish Government and the inconvenience and harassment to which it is likely they will be subjected on arriving in Arabia.

J. P. HEWETT,
Secretary to the Government of India.

No. 2524 (Sanitary).

From J. P. HEWETT, Esq., C.I.E., Secretary to the Government of India, to the SECRETARY TO THE GOVERNMENT OF MADRAS, Local and Municipal Department.

Sir,

Calcutta, November 21, 1897.

In continuation of the correspondence ending with my telegram No. 2500, dated the 20th instant, I am directed to forward, for the information of the Government of Madras, a copy of a Notification, No. 2495, dated the 20th instant, issued by the Government of India under the Epidemic Diseases Act, 1897, with regard to the pilgrimage to the Hedjaz during the current season.

2. I am to request that all possible means may be taken to make the purport of the orders immediately and widely known, and to explain the reasons on which they are based. Every endeavour should also be made through Magistrates of Districts, the religious heads of the Muhammadans, pilgrim-brokers, and in any other way that the Government of Madras think best, to dissuade intending pilgrims from going to the Hedjaz this year.

3. With reference to your telegram of the 13th instant, I am to say that the Government of India consider it essential that the pilgrims from the Madras Presidency should be kept under observation for a period of ten days before being despatched to the port of embarkation. This procedure has been prescribed in the case of pilgrims from all parts of India to remove any possible danger or feeling of alarm.

4. It is still under consideration whether pilgrims from the Madras Presidency and the States of Mysore and Hyderabad shall be shipped from Karachi or Chittagong, and a further communication will shortly be sent on this subject.

I have, &c.,
(Signed) J. P. HEWETT,
Secretary to the Government of India.

No. 2501 (Sanitary).

From J. P. HEWETT, Esq., C.I.E., Secretary to the Government of India, to the SECRETARY TO THE GOVERNMENT OF BOMBAY, General Department.

Sir,

Calcutta, November 21, 1897.

In continuation of my telegram, dated the 20th inst., I am directed to forward, for the information of the Government of Bombay, a copy of a Notification, No. 2495, dated the 20th inst., issued by the Government of India under the Epidemic Diseases Act, 1897, with regard to the pilgrimage to the Hedjaz during the current season.

2. I am to request that all possible means may be taken to make it immediately and widely known that the pilgrimage has been prohibited in the case of all residents of the Bombay Presidency (excluding Sind), and of the reasons for this prohibition. The Government of India are sure that the Government of Bombay will use all means in their power to make the decision as little unpalatable as possible to the Muhammadans of the Presidency.

3. I am also to forward, for the information of the Government of Bombay, a copy of a circular addressed to Local Governments and Administrations on the subject of the arrangements for despatching pilgrims from the part of India to which the prohibition does not extend to Karachi and Chittagong for the purpose of embarking them for the Hedjaz. It will be observed that the pilgrims are to be collected in camps of observation in the several provinces and detained there for at least ten days prior to their despatch by special train and under the charge of a responsible officer to Karachi or Raneegunj, as the case may be. The Local Governments and Administrations concerned have been directed to inform the Government of Bombay of the arrangements made, and to supply periodical information respecting the number of persons in the camp destined for Karachi and the period of observation that they have completed. I am to request that the Government of Bombay will enter into communication with the Local Governments and Administrations concerned on the subject of the arrangements for receiving the pilgrims from the

provincial camps and embarking them at Karachi. The Government of India will also be glad to know the arrangements that are made for the reception and despatch of the pilgrims at Karachi.

4. It will be necessary to make the arrangements known to the shipping agents and pilgrim-brokers, and the brokers must be informed that tickets may be sold only at the observation camps. It will be desirable to ascertain from the shipping agents as far as possible what steamers will be available, when they will start, and whether they will sail from Karachi or Chittagong. Any information that can be obtained about vessels starting from Chittagong should, with the permission of the Governor in Council, be communicated to the Government of Bengal.

5. It is under consideration whether pilgrims from the Madras Presidency and the States of Mysore and Hyderabad should be shipped from Karachi or Chittagong, and a further communication will be sent on this subject.

I have, &c.,
(Signed) J. P. HEWETT,
Secretary to the Government of India.

No. 2505 (Sanitary).

From J. P. HEWETT, Esq., C.I.E., Secretary to the Government of India, to the SECRETARY TO THE GOVERNMENT of BENGAL, Municipal (Medical) Department.

SIR, Calcutta, November 21, 1897.

IN continuation of the correspondence ending with your cypher telegram, dated the 15th instant, I am directed to forward, for the information of the Government of Bengal, a copy of a Notification, No. 2495, dated the 20th instant, issued by the Government of India under the Epidemic Diseases Act, 1897, with regard to the pilgrimage to the Hedjaz during the current season.

2. I am to request that all possible means may be taken to make the purport of the orders immediately and widely known, and to explain the reasons on which they are based. Every endeavour should also be made through Magistrates of Districts, the religious heads of the Muhammadans, pilgrim-brokers, and in any other way that the Government of Bengal thinks best, to dissuade intending pilgrims from going to the Hedjaz this year.

3. I am also to forward, for the information of the Government of Bengal, a copy of a circular addressed to Local Governments and Administrations on the subject of the arrangements for despatching pilgrims from the parts of India from which the prohibition against the pilgrimage has been withdrawn, to Karachi and Chittagong, for the purpose of embarking them for the Hedjaz. It will be observed that the Government of India have accepted the proposal contained in your telegram of the 6th instant, and that pilgrims from Bengal, Assam and the eastern part of the North-Western Provinces and Oudh are to be embarked at Chittagong after being first detained under observation in a provincial observation camp, whence they are to be sent to a central camp at Raneegunj by special train and in charge of a responsible officer. The Local Governments and Administrations concerned have been directed to inform the Government of Bengal of the arrangements made, and to supply periodical information respecting the number of persons in the provincial camp destined for Raneegunj and the period of observation they have completed. I am to request that the Government of Bengal will enter into communication with the Local Governments and Administrations concerned on the subject of the arrangements for receivivg pilgrims from the provincial camps at Raneegunj. The Government of India will also be glad to be informed of the arrangements made for the reception of pilgrims belonging to Bengal and other provinces at Raneegunj, and for their despatch to, and embarkation at, Chittagong.

4. Tickets are to be sold only at the observation camps, and I am to request that steps may be taken to enforce this order and make it known to pilgrim-brokers. The Government of Bombay have been requested to inform shipping agents of the arrangements, and to ascertain as far as possible the number of ships that will be available, the dates on which they will start, and whether they will sail from Karachi or Chittagong. They have also been requested to communicate to the Government of Bengal any information that may be ascertainable about vessels starting from Chittagong.

5. It is still under consideration whether pilgrims from the Madras Presidency and the States of Mysore and Hyderabad should be shipped from Karachi or Chittagong, and a further communication will be sent on this subject.

I have, &c.,
(Signed) J. P. HEWETT,
Secretary to the Government of India.

No. 2509/14 (Sanitary).

From J. P. HEWETT, Esq., C.I.E., Secretary to the Government of India, to the SECRETARY TO THE GOVERNMENT OF THE NORTH-WESTERN PROVINCES AND OUDH, Medical Department.
The JUNIOR SECRETARY to the GOVERNMENT of the PUNJAB.
The CHIEF COMMISSIONER of the CENTRAL PROVINCES.
The CHIEF COMMISSIONER of ASSAM.
The AGENT to the GOVERNOR-GENERAL in RAJPUTANA.
The AGENT to the GOVERNOR-GENERAL in CENTRAL INDIA.

SIR,

Calcutta, November 21, 1897.

I AM directed to forward, for the information of
the Govt. of the N.-W. Provinces and Oudh
the Government of the Punjab
your information
, a copy of a Notification, No. 2495, dated the 20th instant, issued by the Government of India under the Epidemic Diseases Act, 1897, with regard to the pilgrimage to the Hedjaz during the current season.

2. I am to request that all possible means may be taken to make the purport of the orders immediately and widely known, and to explain the reasons on which they are based. Every endeavour should also be made through Magistrates of Districts, the religious heads of the Muhammadans, pilgrim-brokers, and in any other way that
the Govt. of the N.-W. P. & Oudh
the Government of the Punjab
you
thinks
think
best to dissuade intending pilgrims from going to the Hedjaz this year.

3. It will be observed that embarkation is permitted only at the ports of Karachi in Sind and Chittagong in the Lower Provinces of Bengal. The route *viâ* Chittagong is designed for the inhabitants of Bengal, Assam and the eastern portion of the North-Western Provinces and Oudh, and the route *viâ* Karachi for the inhabitants of Sind and of Upper India. All persons in
the North Western Provinces and Oudh
the Punjab
the Central Provinces
Assam
} and neighbouring Native States
Rajputana
Central India
who persist in the desire to go on pilgrimage must be collected at an observation camp within the
Province
Agency*
, where they must be detained under the careful superintendence of a Commissioned Medical Officer for at least ten days. Pilgrims who embark at Karachi will be sent direct to the port from the provincial observation camp, and pilgrims who embark at Chittagong will first be sent from the provincial camp to a central camp at Raneegunj, whence they will be despatched to Chittagong under arrangements that will be made by the Government of Bengal. Intending pilgrims who have completed the ten days' observation period, and are certified to be free from infection, will be sent to
Karachi†
Raneegunj‡
as soon as information is received by
the Government of the North-Western Provinces and Oudh
the Government of the Punjab
you
from
Sind†
Bengal‡
that the authorities are ready to take them over. This will of course depend on the number of ships available and on the date on which they sail. Pilgrims must be despatched from the provincial camp by special train and under the charge of a responsible officer. It will be necessary to communicate with the political authorities in Native States with regard to the reception of pilgrims from those States in the provincial observation camp. Passage tickets to the Hedjaz may be sold only at the observation camps, and I am to request that the necessary steps may be taken to enforce this order, and, in communication with the Governments of Bombay and Bengal, make it known to shipping agents and pilgrim-brokers.

* [In the case of Rajputana and Central India.]

† To Punjab and Rajputana.
‡ To Assam only.

4. I am to request that a place for the observation camp may be selected at once, that arrangements may be made as quickly as possible to give effect to the instructions contained in this letter, and that the arrangements may be communicated to the Government

of India and to the Governments of Bombay and Bengal. Arrangements should be made in communication with the Governments of Bombay and Bengal for supplying a periodical statement of the number of persons in the provincial camp destined for Karachi or Raneegunj, and the period of observation they have completed, and for despatching pilgrims from the provincial camp to Karachi or the Raneegunj camp as the case may be.

I have, &c.,
(Signed) J. P. HEWETT,
Secretary to the Government of India.

No. 2549 (Sanitary).

From J. P. HEWETT, Esq., C.I.E., Secretary to the Government of India, to the SECRETARY TO THE GOVERNMENT OF MADRAS, Local and Municipal Department.

SIR, Calcutta, 27th November 1897.

I AM directed to address you in continuation of my letter, No. 2524, dated the 21st instant, on the subject of the departure for the Hedjaz of pilgrims from the Madras Presidency, from the Mysore and Hyderabad States, and from the Hyderabad Assigned Districts. The Government of India accept the suggestions contained in your telegrams of the 11th and 13th instant that pilgrims from the Madras Presidency should be despatched by sea to Karachi *viâ* Bombay from some port in the Madras Presidency other than the port of Madras, and that they should be transhipped at Bombay without being permitted to land. The Government of Bombay are being requested to make the necessary arrangements for the transhipment of the pilgrims at Bombay and to enter into communication with the Government of Madras on the subject

2. The intending pilgrims should in the first place be collected in an observation camp and detained for a minimum period of ten days under the careful superintendence of a Commissioned Medical Officer. Intending pilgrims who have completed the ten days', observation period and are certified to be free from infection should be sent to a Madras port to be shipped to Bombay *en route* for Karachi. The dates of the despatch of pilgrims from the Madras port should, with the permission of the Governor in Council, be arranged in communication with the Government of Bombay, in order that they may fit in with the transhipment arrangements at Bombay and with the arrangements made at Karachi for despatching pilgrims to the Hedjaz. Pilgrims should be despatched from the provincial camp to the Madras port of departure by special train and under the charge of a responsible officer, who, the Government of India consider, should accompany the pilgrims as far as Bombay. Passage tickets to the Hedjaz may be sold only at the observation camps, and I am to request that the necessary steps may be taken to enforce this order, and, in communication with the Government of Bombay, to make it known to shipping agents and pilgrim-brokers.

3. The Government of India consider that pilgrims from the Mysore and Hyderabad States and from the Hyderabad Assigned Districts should also be collected for observation in the Madras observation camp, and that they should be shipped to Karachi along with, and under the same arrangements as, the Madras pilgrims. A copy of this letter is being sent to the Resident in Mysore and the Resident at Hyderabad, and I am to request that the Government of Madras will settle, in communication with them, the arrangements for collecting the Mysore and Hyderabad pilgrims in the Madras observation camp.

4. I am to request that, with the permission of the Governor in Council, arrangements may be made as quickly as possible to give effect to the instructions contained in this letter, and that the arrangements may be communicated to the Government of India and the Government of Bombay.

I have the honour to be, Sir,
Your most obeidient Servant,
J. P. HEWETT,
Secretary to the Government of India.

From the GOVERNMENT OF BOMBAY to the SECRETARY OF STATE FOR INDIA.

(General No. 37.)

My Lord, Bombay Castle, December 11, 1897.

With reference to your Lordship's cypher telegram, dated 7th October last, we have the honour to submit for Your Lordship's information the following summary of the measures adopted by the Bombay Government for the suppression of the bubonic plague.

2. The discovery of the earliest cases of bubonic plague, whether in large towns or rural areas, has always been rendered exceedingly difficult by the persistent efforts of the people to conceal the facts, but it may be said with approximate accuracy that in the hot weather months of 1897 the disease in an epidemic form had obtained a footing in only a few very limited areas, and that by the end of the hot weather the efforts made to prevent its spread and to suppress it where it had become established appeared likely to be speedily successful. The localities especially affected were: (1) in British India, the five cities of Bombay, Poona, Karachi, Hyderabad and Sukkur, and villages skirting the sea coast in the districts of Surat, Thana and Kolaba; (2) in Native States, the port of Mandvi, and some neighbouring villages in Cutch, the town of Palanpur, in the Palanpur State, and the village of Manerajuri, in Kolhapur, and (3) in Portuguese India, the settlement of Damáun, on the borders of the south-western corner of the Surat District. Though numerous imported cases were reported from other places and small indigenous outbreaks occurred in several villages and towns, especially in Upper Sind and the Ratnagiri District, these may be neglected in presenting a general view of the extent to which the disease had attained a dangerous prominence in the hot weather months.

3. In the five cities of Bombay, Poona, Karachi, Hyderabad and Sukkur, in all of which plague was violently epidemic, the entire local control of measures to suppress the disease was eventually vested in Plague Committees. These were small executive bodies, which organised and managed the local resources and were aided in varying degrees by the military.

4. As the result of the energetic and systematic work of these Plague Committees aided by the local officers in Sind, plague had by the month of June almost entirely disappeared from the cities of Karachi, Hyderabad and Sukkur and also from such outlying villages as had been infected. The improvement continued and the Province of Sind was entirely free of plague by the beginning of August. In Poona (including the cantonment and the suburban limits) the vigorous efforts made by the Committee, of which the late Mr. Rand was Chairman, had this result that, whereas in the week ending 19th March 1897, the first week in which organised operations were in progress, the number of plague cases discovered was 311 and in the two ensuing weeks the numbers were 345 and 292, for the week ending the 11th June 4 cases only were discovered, 3 cases in the following week and none for that ending the 25th idem. In the City of Bombay, too, the general mortality had fallen to a rate below the normal rate of that season, and the average daily number of plague cases discovered for the week ending 25th June 1897 was only 4.

5. The measures adopted to clear the plague out of the districts of Surat, Thana and Kolaba met with equal success. In the week ending the 18th of June there were no cases in the Surat District, during the next week only one case was reported, and again in the following week there were none. In the Thana District the cases fell to 2 in the week ending 25th June and to 2 in the following week, and then for a long period the district was entirely free from plague. In Kolaba the success was somewhat less marked, but there too the fact that in the week ending 2nd July only 2 cases were reported for the whole district appeared to justify a hope that the efforts made by the local officers with the assistance of the Bombay Plague Committee would soon be entirely successful.

6. As regards Native States, by the end of June, plague appeared to have practically subsided in the Baroda villages which separate the northern coast talukas of the Surat District from the southern. It had some time previously entirely disappeared from Palanpur, and in Manerajuri, though cases were occasionally reported, the disease appeared to have practically subsided. In Cutch Mandvi, where plague had raged with extraordinary virulence and was still severe, a distinct improvement was noticeable, and the fact that the almost isolated position of the Cutch State rendered it possible to cut off communication with British India through Kathiawar, except by one route whereon a camp

of observation for the detention and disinfection of arrivals from Cutch had been established, diminished the danger caused to other places by the continuance of plague in this State.

7. At the end of June and beginning of July, notwithstanding the rapid disappearance of plague except in the Cutch State, it was recognized that small outbreaks might occur from time to time, and that it was of the utmost importance to instantly suppress them wherever and whenever they might occur. In order to attain this end, Dr. Lowson suggested the formation of "flying columns," to be kept ready for immediate despatch to any place where an outbreak was discovered, with a view to its immediate suppression and the prevention of its spread. The Surgeon-General, who was consulted, expressed his entire concurrence with Dr. Lowson's suggestion and stated that he could himself form and control "flying columns." Thereupon Government Resolution No. 4073—2810-P., dated the 26th July, 1897, of which a copy is appended, was issued.*

8. Accordingly "flying columns" were despatched by the Surgeon-General without delay to Lanowli and Karad, a town in the Satara District where plague had been discovered. At the beginning of August it was ascertained that plague had appeared in Igatpuri, an important railway station in the Nasik District, near the Thull Ghat. A "flying column" was promptly despatched to that place, and subsequently others were sent to other places, viz., Kaledhon and Tasgaon, in the Satara District; Sirur, in the Poona District, and more recently to the cities of Nasik, Sholapur and Hubli. In arranging for these "flying columns," serious difficulty was experienced in consequence of the scarcity of both Commissioned Medical Officers and subordinates, as the Government of India had recalled for active military service large numbers of officers and subordinates who would otherwise have been available for plague duty.

9. The origin of the outbreak of plague at Karad, from which place the disease spread rapidly through the south of the Satara District, is unknown, but it now appears certain that the existence of the disease was at first concealed and remained undiscovered until it had obtained a firm footing. The existence of plague in Karad had been alleged as early as the beginning of June, but the Collector of Satara, who was called upon to report on the matter, reported as the result of his enquiries that there had been a somewhat severe attack of ordinary fever but no plague, and that the total mortality from all causes in the first eleven days of June had been below the average. On the 10th July, however, he reported nine indigenous cases of plague in this town of some 12,000 inhabitants, but added that he was not sure that the disease was true plague, as there had been no deaths. Notwithstanding an increase in the number of medical subordinates in this town and the efforts of the Assistant Collector and of the "flying column" despatched, as already mentioned, by the Surgeon-General, the disease rapidly increased in virulence, and was accompanied by an exodus of the population, from which followed the spread of the epidemic to village after village in the south of the Satara District. The following are the villages in which the mortality from plague (shown in the columns of the statement) has been heaviest:—

Sátára District.	FORTNIGHTS ENDING.								
	July 30th.	Aug. 13th.	Aug. 27th.	Sept. 10th.	Sept. 24th.	Oct. 8th.	Oct. 22nd.	Nov. 5th.	Nov. 19th.
Karád	69	167	292	335	134	88	...	...	...
Kaledhon	...	...	80	173	123	50	...	...	...
Shere	...	...	...	48	38	63	38	...	...
Masur	...	...	...	...	40	52	91	126	60
Vejegaon	...	...	...	...	79	104	...	...	...
Supne	...	..	...	...	...	48	128	...	177
Várunje	...	...	...	...	...	43	35	44	...
Karve	...	...	..	...	...	54	62	90	95
Kále	...	...	...	...	...	69	93	132	83
Mundhe	...	...	...	...	...	35	...	...	...
Belavde Haveli ...	...	...	...	...	...	57	46	31	...
Vadkhel	...	...	...	...	...	31	...	...	...
Chinchni	...	...	...	...	...	74	45	50	...
Tásgaon	...	...	...	...	...	45	76	147	84
Ving	...	...	...	...	...	...	55	82	45
Parli	...	...	...	...	...	...	36	31	...
Jakhinwádi	...	...	...	...	...	...	42	90	62

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* Not reprinted.

Sátára District.	Fortnights ending								
	July 30th.	Aug. 13th.	Aug. 27th.	Sept. 10th.	Sept. 24th.	Oct. 8th.	Oct. 22nd.	Nov. 5th.	Nov. 19th.
Chikhli	...	...	...	...	...	...	35	60	43
Khodshi	...	...	...	...	...	...	35	...	...
Pachvad	...	...	...	...	...	...	36	...	...
Devikhindi	...	...	...	...	...	...	34	...	...
Dahivadi	...	...	...	...	...	...	38	69	53
Narávane	...	...	...	...	..	...	42	34	...
Bopegaon	...	...	...	...	...	...	30	...	...
Bhose	...	...	...	...	...	...	35	59	...
Aundh	...	...	...	...	..	...	...	44	64
Goleshwar	...	...	...	...	...	...	...	31	36
Vadgaon Haveli	...	...	...	...	...	...	...	36	75
Ond	...	...	...	...	...	...	...	45	...
Kival	...	...	...	...	...	...	...	59	67
Sakurdi	...	...	...	...	...	...	...	...	31
Tambve	...	...	...	...	...	...	...	...	35
Sonsal	...	...	...	...	...	...	...	...	32

10. Turning now to the Poona District as distinct from the city of Poona, the returns show 4 indigenous cases at Lanowli in the week ending 25th June. There were 2 cases in the following week, 5 in the next, 10 in the next, and 34 in the next.

11. In the week ending 30th July, in addition to 32 cases from Lanowli, 14 were reported from the Kirkee Cantonment and 2 from Ghodnadi in the Sirur Taluka. The following figures show the mortality in the villages most seriously affected :—

Poona District.	Fortnights ending							
	August 13th.	August 27th.	September 10th.	September 24th.	October 8th.	October 22nd.	November 5th.	November 19th.
Kirkee Cantonment	106	159	207	62	...	...	...	...
Lonávla	57	...	...	...	...	...	...	...
Ghodnadi	...	40	89	101	79	39	...	...
Mawadi	...	...	...	...	...	...	38	30
Avsári Budruk	...	...	...	...	...	...	54	...
Talegaon Dábháde	...	...	...	...	...	...	...	55

and a few cases in several small villages. From the end of September plague has substantially disappeared from Kirkee and Lanowli and has diminished in Ghodnadi and Ghorpuri.

12. The violent outbreak of plague in Kirkee Cantonment which adjoins and is in constant communication with Poona City, combined with the less severe outbreak in Ghorpuri which adjoins the Poona Cantonment, led, as might be expected notwithstanding measures for watching roads and bridges, to a recrudescence of the disease in Poona City, from which plague had practically disappeared, and in the Poona Cantonment. The figures for Poona city, including the cantonment and the suburban municipality, for successive weeks are noted below: —

Week ending	No. of cases.	Week ending	No. of cases.
25th June	0	17th September	66
2nd July	3	24th "	100
9th "	19	1st October	166
16th "	8	8th "	199
23rd "	3	15th "	322
30th "	13	22nd "	349
6th August	16	29th "	510
13th "	14	5th November	651
20th "	19	12th "	522
27th "	22	19th "	611
3rd September	13	26th "	525
10th "	22		

13. In consequence of an outbreak at Ghodnadi and the adjoining town and cantonment of Sirur situated in the district of Poona on the borders of the Ahmednagar District, the disease spread to the latter district. On the 24th September 2 cases were reported in the cantonment of Ahmednagar, 2 more in the following week, and 5 in the week ending 8th October. In the latter week also the village of Jaola was infected, 14 cases being reported. In the two following weeks 6 and 11 cases, respectively, were reported from the Ahmednagar Cantonment and 10 and 16, respectively, from Jaola. Rajapur also became infected, 22 cases being reported for the week ending 22nd October.

14. Again, the virulence of the outbreak at Poona led to the importation of plague into the large towns of Sholapur, the infection, it is believed, being taken there by the servants of European officers who had come from an infected portion of the Poona Cantonment. In the week ending 1st October 11 cases were reported from Sholapur, followed in the next eight weeks by 9, 17, 48, 86, 146, 129, 200 and 327 cases respectively.

15. The first report of plague from the Nasik District was received in the week ending 6th August, in which 14 cases occurred in Igatpuri. The following statement shows the progress of plague at Igatpuri during the successive weeks:—

Week ending	No. of cases.	Week ending	No. of cases.
13th August	6	8th October	40
20th „	16	15th „	22
27th „	27	22nd „	18
3rd September	83	29th „	6
10th „	109	5th November	...
17th „	54	12th „	3
24th „	69	19th „	...
1st October	47	26th „	...

In the week ending 8th October 12 cases were reported at Manmad, followed in the next two weeks, respectively, by 5 and 4 cases. In the week ending the 15th October plague was discovered in the city of Nasik, 3 cases being reported in this and 9 in the following week.

16. In the Konkan there has recently been a few slight outbreaks in the Thana District, one outbreak of no serious importance in Ratnagiri and distinct recrudescence in villages previously affected in the Kolaba District, but the state of things in these districts has not hitherto given cause for serious alarm.

17. In Gujarát, on the other hand, an outbreak of great severity still prevails in the city of Surat, and the state of things in Palanpur, the capital of the Native State of that name, is a serious menace to Rajputana and Northern India. The gradual spread of the disease in Surat and Palanpur is to some extent indicated by the following statistics, but it should be borne in mind that in the city of Surat the statistics of total mortality from all causes greatly exceed the statistics of normal mortality, and that there is therefore reason to fear that in the period to which the figures given relate, a large number of plague cases remained undiscovered :—

Week ending	Surat.	Pálanpur.	Week ending	Surat.	Pálanpur.
	Cases.	Cases.		Cases.	Cases.
9th July	1	...	24th September	39	84
16th „	...	...	1st October	26	61
23rd „	...	...	8th „	34	46
30th „	...	...	15th „	91	46
6th August	2	8	22nd „	64	63
13th „	1	5	29th „	136	89
20th „	9	2	5th November	120	58
27th „	10	11	12th „	292	25
3rd September	12	35	19th „	210	16
10th „	32	28	26th „	143	5
17th „	29	81			

18. As regards the measures taken to suppress the disease where it has appeared it may in the first place be observed that the measure on which most reliance was placed in the hot weather months of 1897, both in Sind and in the Thana District, was the entire evacuation of infected villages and hamlets until they had been thoroughly disinfected. Until the dwellings in the villages had been thoroughly disinfected the inhabitants lived in huts in the fields, returning to their permanent dwellings only when permitted to do so by the local Plague authorities. The continuance of this precaution was, unfortunately, found to be impossible during the monsoon months of heavy rainfall.

19. The other measures relied on for controlling the disease are isolation of the sick in hospital; segregation of all who have been in close contact with them, for a period long enough to prove whether they have or have not in them the seeds of the disease; and thorough disinfection of all infected premises. This has necessited the equipment as hospitals of such buildings as could be obtained, for rural towns in India have nothing more than a small dispensary and villages possess no hospital accommodation of any kind. In the dry season the defect is easily and rapidly remedied by the construction of light sheds, but in the rainy season more substantial buildings were required. Similar difficulties affected the provision of suitable segregation accommodation. In the measures here indicated the local officers, local medical practitioners and the "flying columns" despatched by the Surgeon-General to the principal centres of infection were vigorously employed.

20. The difficulties we have mentioned have fortunately disappeared with the setting in of the dry season, and accommodation for isolation of the sick and for segregation can be plentifully provided. Evacuation of infected quarters on a large scale has also become generally possible. There is, however, one difficulty always present, whatever may be the season. It is the persistent and crafty ingenuity with which the people conceal cases of plague. To this habit of the people is due the fact that plague has so often taken possession of a town before it has been possible to devise and put into operation measures for its extinction. Another difficulty is the habit people have acquired of leaving an infected area and moving in all directions, regardless of the consequences to others amongst whom they may carry infection. Most dangerous of all is the conveyance of sick persons from one part of a town to another or from one town or village to another, and hardly less dangerous is the very common practice of seeking refuge in the houses of their relatives or neighbours by those in whose house a case of plague has occurred. The object is concealment so as to escape the inconveniences of segregation, disinfection, &c., but the effect is the accelerated and easy spread of the disease. To prevent these dangers the only real remedy is to secure the co-operation of the people, and throughout all the operations this has been our endeavour. To attempt by force to eradicate a disease when the entire population exerts itself to oppose the measures adopted is an effort foredoomed to failure. In furtherance of this view, villagers have been directed not to admit into their village sites persons who come from infected places. In many places fortunately the villagers have protected themselves as directed and have accomplished by their own effort more to keep the disease out of their villages than any measures carried out in opposition to them could have achieved. But in many places the villagers are too inert, too ignorant, or too callous to take precautions themselves. In the large towns where strangers are constantly and in large numbers coming and going, self-protection of this kind is almost, if not quite, impossible. It has therefore been necessary to continue the elaborate system of inspection posts established in the previous season. Besides the large number of local inspectors appointed at railway stations to watch arrivals thereat from infected areas, what are known as first-class inspection stations have been established at Kalyan, Palghar, Ahmedabad, Bhusaval, Dhond, Hotgi, Rajewadi and Londa. At a first-class inspection station trains are emptied by night as well as by day, all passengers are individually examined by Medical Officers, and a train is not allowed to proceed until a certificate to the effect that all passengers are free from suspicion of plague has been given by the Chief Medical Officer. Kalyan and Palghar are near to Bombay City on the G. I. P. and B. B. & C. I. Railways, respectively, the former being the place at which the line bifurcates, its north-eastern branch running towards Calcutta by way of Igatpuri, Nasik and Bhusaval, and its south-eastern towards Madras by way of Lanowli, Poona, Sholapur, and Hotgi. Ahmedabad, Bhusaval and Hotgi may be regarded as frontier stations, Bhusaval protecting Bengal and the Central Provinces, and Hotgi the Madras Presidency. The Ahmedabad inspecting post is designed for the protection of Kathiawar and Rajputana among other places, but its efficacy is much diminished by the outbreak at Palanpur which lies further north.

21. It was originally arranged that all first class inspection posts should be in charge of Commissioned Medical Officers, but in consequence of the drain on the Medical Department for active military service, it has recently been found impossible to provide Commissioned Officers for this duty. In addition to first class inspection posts, it may be mentioned that special inspection of arrivals and departures is made at Poona Station, and at Manmad Junction there is a special inspection of persons travelling towards Ahmednagar by the Chord Railway. The inspection posts at Rajewadi and Londa are on the Southern Maratha Railway, which runs from Poona through the districts of Poona, Satara, Belgaum, and Dharwar and the Kolhapur State. In consequence of the severe epidemic in the Satara District, inspection of passengers by up trains as well as by down trains has for some months past been in force at Rajewadi, and arrangements have recently been made for the same reason to transfer the inspection post from Londa in the south of the Belgaum District to Kudchi in the north. At Kudchi on the Southern Maratha Railway and at Manmad on the G. I. P. Railway, arrangements are in force for the disinfection of the clothing and baggage of passengers who appear to be suspicious. Similar arrangements have been in force at the frontier stations of Bhusaval and Hotgi for more than six months past. The Kolhapur State, it may be mentioned, which lies immediately south of the Satara District, and has a branch railway line, protects itself from infection by an elaborate system for detention under observation of all persons arriving by train except those specially exempted. For the further protection both of Kolhapur and the British villages in the Satara and Poona Districts from the risk of infection by railway passengers by the Southern Maratha Railway, it was proposed, as soon as plague assumed epidemic proportions in the south of the Satara District, to establish additional first class inspection posts at Tasgaon Road and Koregaon, but the difficulties in the way of providing the necessary staff, hospitals and segregation sheds, induced Government, as a substitute, to arrange with the railway authorities to take up passengers by only two trains daily in each direction, at these and intermediate stations, and to prevent such passengers entering the trains until they had been examined by a medical inspector, whose duty it was to alight at each railway station and examine intending passengers collected by the police.

22. In view of the rapidity with which plague was spreading in the Satara District a Committee under the presidency of the Honourable Mr. Spence and comprising the marginally noted officers, all of whom have had wide experience of plague measures, was appointed to devise measures for the prevention of the spread of the disease. On receipt of their unanimous report, the rules, of which a copy is attached, as is also a copy of the report itself and of Colonel Wray's separate report, were distributed for the guidance of Collectors.* Action under these rules is now being vigorously taken in all infected areas of the Presidency, wide powers to engage the necessary additional establishments and incur the necessary expenditure, having been conferred on executive officers.

The Honourable Mr. J. K. Spence, I.C.S.
Mr. F. S. P. Lely, I.C.S.
Mr. R. A. Lamb, I.C.S.
Mr. A. C. Logan, I.C.S.
Lieutenant-Colonel J. W. Wray.

23. It may further be mentioned that extensive action is being taken in numerous places of importance in the Presidency for detaining and keeping under observation persons who are regarded as suspicious, in which class all persons from infected areas may be said to fall, unless they can be depended on to reside in a fixed place and to present themselves daily for medical examination for 8 or 10 days after arrival. This measure is the one to which much of the success attained last hot weather in preventing the spread of plague at a critical time from Poona to certain cities in the Deccan, from the Surat District to Broach, and from Sukkur to Shikarpur and other places in Sind is ascribed.

24. Special arrangements for training selected subordinates of all departments in disinfecting work have been made under the supervision of the Surgeon-General.

25. Lastly it may be mentioned that Mr. A. Wingate, whose administration was so successful in stamping out the disease in the Province of Sind, has been appointed to be Plague Commissioner for the Presidency and has been given very extensive powers. Surgeon-Major-General Cleghorn, Director-General, Indian Medical Service, and Surgeon-Colonel Hay, lately Officiating Surgeon-General with this Government, have hitherto been associated with him as advisers. Surgeon-Major-General Bainbridge, the newly-appointed Surgeon-General, will now replace Dr. Hay.

We have, &c.,
(Signed) SANDHURST,
&c., &c.

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* Not reprinted.

From the GOVERNMENT OF INDIA to the SECRETARY OF STATE FOR INDIA.

(Sanitary No. 1.)

MY LORD, Calcutta, January 6, 1898.

IN continuation of our sanitary despatch, No. 27, dated the 9th December, 1897, we have the honour to forward, for Your Lordship's information, statistics showing the progress of the plague during that month, and the following further narrative of matters connected with the plague.

2. We regret to state thate the rise in the number of cases in the City of Bombay reported in our last despatch has continued. The following plague seizures and deaths were reported during the first and second halves of December:—

	Seizures.	Deaths.
1st to 16th	276	217
17th to 31st	529	427
Total	805	644

These totals compare with 371 seizures and 252 deaths reported during the month of November. The total mortality of the city increased from 3,389 in October and 2,974 in November to 3,736 in December. The disease appears also to be assuming a more virulent type, the percentage of fatal cases in December being 80 as against 68 in November. The number of reported plague seizures and deaths and the general mortality remained, however, considerably lower than during December 1896.

3. Outside the City of Bombay there has been a general improvement, especially during the second half of the month. The following statement shows the places in the Bombay Presidency proper where plague is now most prevalent, and compares the number of reported seizures during the months of December and November:—

	December.	November.
Satara District	2,125	4,549
Poona City	1,648	2,534
Sholapur District	1,475	1,123
Surat District	646	855
Poona District	474	763
Nasik District	371	262
Belgaum District	342	194
Palanpur State	273	152
Ahmednagar District	273	161
Cutch State	151	336
Baroda State...	78	27
Kolhapur State	77	47
Thana District	68	33
Khandesh District	63	1
Akalkot State	47	7
Kolaba District	36	74
Dharwar District	35	4

The improvement is even greater than is indicated by a comparison between the figures of December and November, since the Nasik, Thana and Kolaba Districts, and the Palanpur, Baroda, Kolhapur and Janjira States are the only localities in which there has not been a marked decrease in the number of cases during the second half of December. The great improvement in Satara District and Poona City, which have for some time past been the two worst localities, is specially satisfactory. The infection continues, however, to be very widespread in Satara District. In Sholapur District the disease is practically confined to the town, where the number of cases is steadily falling. The town of Surat continues to be much the worst place in the Surat District, but here also the disease shows a considerable decline. The cases in the Poona District are spread over a number of places, but are rapidly diminishing in number. The towns of Nasik and Malegaon account for the greater portion of the cases in the Nasik District, and the increase is mainly at

Nasik itself. Although there were considerably more cases in the Belgaum District in December than in November, the second half of December shows a decline in the number of cases. Belgaum town and cantonment, and Kagwad, in Taluka Athin, are the seats of infection. The town of Palanpur is now almost free from plague, and the increase in the number of cases reported from the Palanpur State is due to the spread of infection among the villages. The town of Ahmednagar, and Shrigonda, in the Taluka of the same name, are the worst places in Ahmednagar District; there has been a marked decline in the number of cases during the second half of December. In the villages of the Cutch State the epidemic continues steadily to decrease in intensity. The rise in the figures for the Baroda State is due to an increase in the number of cases in the City of Baroda. Several places are affected in Kolhapur, and there has been a slight increase in the number of cases. Bassein is responsible for the increase in the number of cases in Thana District. The increase in Khandesh District was due to an outbreak at Jalgaon which has now declined.

4. The Bombay Plague Commission, accompanied by Surgeon-Major-General Cleghorn, has completed its inspection of the infected localities and reported for the orders of the Local Government on the arrangements in force at each of them. The only infected place, outside the jurisdiction of the Bombay Government, which came under its inspection was the Baroda City. This was visited by Mr. Wingate and Dr. Cleghorn on the 17th December. The arrangements for segregating the sick and those who had lived with them, and for disinfecting the infected houses were found to be admirable. Notwithstanding these arrangements the number of cases reported from the city has continued to increase, and Dr. Cleghorn stated that a steady increase in the general death-rate points to the existence of an increasing number of undiscovered cases. The town is a large one and the position appears to us to be serious; we have therefore caused the letter of which a copy is appended to this despatch to be sent to the Agent to the Governor-General.* We have insisted that for the purpose of discovering all cases of plague and enforcing the needful precautions it is necessary that the whole city should be divided into a number of districts, each under the charge of a responsible officer, and equipped with an adequate staff. The importance of evacuating the infected portions of the city has also been impressed upon the Agent to the Governor-General. The Government of Bombay have been requested to direct Mr. Wingate to assist Colonel Martelli with his advice, and we have suggested that the staff in the employ of the State, which has done its work very well, should be re-inforced by experienced officers from the Bombay Presidency.

5. M. Haffkine and Surgeon-Major Lyons have presented a joint report on the effect of the experiments in preventive inoculation carried out during the epidemic of plague in the Portuguese territory of Damaun. The experiments were conducted on an extensive scale and the results were encouraging. M. Haffkine has suggested a scheme for the more extensive introduction of the preventive inoculation process, and we have commended the matter to the consideration of the Government of Bombay.

6. With this despatch is forwarded for Your Lordship's information a copy of a report* prepared by Major Hyde-Cates, Political Agent, Cutch, on the plague in Cutch, from the 1st October 1896 to the 15th August 1897. With reference to this report, we have again laid stress on the importance of improving the sanitary condition of the town of Cutch-Mandvi. Major Hyde-Cates's report does not show that sufficient attention has been paid to this important subject.

7. Twenty-two fresh cases of plague were reported from Kotri in Sind during December, only eight of which occurred after the 15th of the month. Appended to this despatch is a copy of correspondence with the Government of Bombay on the measures adopted to stamp out the diseases.* These measures were carried out with great care and energy, but we consider that the outbreak might have been more quickly suppressed had arrangements been made in the earlier stages of the outbreak, for the evacuation of the town and the segregation of all the inhabitants in a health camp, instead of confining them all within the infected locality. This matter was alluded to in the telegram sent to Your Lordship on the 16th December 1897. No cases of plague have occurred elsewhere in Sind.

8. Four fresh cases have been reported from the Sirohi State in Rajputana. One case occurred on the 16th and the remaining three on the 18th of the month. The inmates of

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* Not reprinted.

the infected houses have been segregated, and we have suggested that a similar course should be adopted with regard to the inmates of other neighbouring houses.

9. There has been a decrease in the number of cases of plague reported from the Jullundur and Hoshiarpur Districts of the Punjab. Ninety-six cases were reported from Khankhanan from the 1st to the 16th of December and only eleven cases during the rest of the month. No cases have occurred in Khatkar Kalan since the 4th December nor in Jhander Khurd since the 19th. The infection has spread to two other neighbouring villages—Birampur and Khatkar Khurd—where a few cases have occurred. In Birampur most of the cases occurred during the middle of the month, and the number has already greatly declined. The usual precautions were adopted. Three cases were reported from Khatkar Khurd on the 29th and one on the 30th.

Two reports on the arrangements made at Khankhanan, Khatkar Khalan and Jhander Khurd * are appended to this Despatch. The precautionary measures appear to have been carried out in a very careful and energetic manner.

10. Five fresh cases of plague were reported from Khankhal in the North-Western Provinces during the month. They occurred on the 8th, 12th, 13th, 24th and 31st respectively. A suspicious case was reported from a village near Khankhal on the 31st.

11. At the instance of the Government of the North-Western Provinces we have issued orders under the Epidemic Diseases Act forbidding the sale within the Bombay Presidency (excluding Sind) of tickets to travel by railway to any of the stations named in the margin during the months of January and February to any persons intending or believed to be intending to visit the North-Western Provinces and Oudh on pilgrimage.

Ajodhya.
Fyzabad.
Allahabad.
Muttra.
Brindaban.
Benares.
Moghal Sarai.
Bindhachal.
Mirzapur.
Hardwar.

The Government of the North-Western Provinces and Oudh represented that it was anticipated that large fairs would be held during the two months in question at or near the places named, and the danger of the assemblage of large numbers of pilgrims from the infected area is so great that we considered it necessary to sanction the restriction for which the Local Government asked.

12. We forward for Your Lordship's information a copy of a report* submitted by a Committee which assembled at Calcutta to consider the subject of preventing passengers from the Bombay Presidency escaping detection by re-booking at intermediate stations, and of the orders issued to Local Governments and Administrations in connection with this report. The dangers arising from the practice of re-booking to avoid detection were explained in paragraph 10 of our Despatch of the 9th December.

The following were the three main suggestions made by the Committee :—

(1) The tickets of all passengers leaving the infected area should be punch-marked so that there may be no difficulty in recognizing them even by a dim light.

(2) When a passenger with a marked ticket alights, his name and address should be taken by the Railway Police, and arrangements should be made by District Police that any case of sickness occurring within ten days in the house of the newly arrived traveller should be reported.

(3) The officials who take the name and address of passengers should endeavour to identify passengers who re-book within 48 hours. The number of the fresh ticket obtained by such passengers should be telegraphed down the line, and on alighting he should be treated as a traveller coming from an infected area.

We have accepted all three suggestions made by the Committee, and instructions have issued for their general and systematic adoption. With regard to the first suggestion, the Committee represented that the names of all stations in the Bombay Presidency are not known to the police and station officials further east, and that there should be some easy mode of recognizing the fact that a ticket was issued within the Presidency. Orders are accordingly being issued for the punching of tickets on the borders of the Bombay

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* Not reprinted.

Presidency in the manner suggested by the Committee. The second and third suggestions will be carried out through the agency of the railway police, and special officers will be appointed for the purpose at all railway stations along the lines leading from the Bombay Presidency. A single official will be posted at small stations, and we have suggested that it may be necessary to employ a larger staff under the superintendence of a responsible and intelligent officer at more important places. Local Governments and Administrations have been directed to enter into communication with one another to ensure cordial co-operation between the railway police of the different provinces in giving effect to the proposed arrangements. A small inspecting staff will also be appointed in each province to supervise the working of the rules.

13. Local Governments and Administrations are making arrangements for the despatch of pilgrims to the Hedjaz in accordance with the scheme which was explained in our last Despatch. Only one point has been discussed in the further correspondence on the subject which it is necessary to report for Your Lordship's information. It was stated in paragraph 15 of our Despatch of the 9th December that we were in communication with the Government of Bombay with regard to persons from other parts of the country who had already entered the Bombay Presidency with a view to go on pilgrimage. Sixty-seven pilgrims from other parts of India and from Central Asia have been collected at the Malet Bandar observation sheds at Bombay. They are at present being detained under observation and will be sent to a special camp in Sind, away from the port of Karachi, where they will remain in segregation until a vessel is ready to carry them to Jeddah. The Government of Bombay have been informed that in view of the increase of plague in the City of Bombay it is undesirable to send from that port any more intending pilgrims who may enter the Bombay Presidency, even though they belong to other parts of India, and that the pilgrims now at Malet Bandar should be sent to Sind as soon as they have completed the ten days' period of observation. Any other persons who may arrive in the Bombay Presidency with a view to go on pilgrimage will be dealt with as directed in the Notification for the control of the pilgrimage during the current season which was issued under the Epidemic Diseases Act on the 28th November last; that is to say, they will be placed in a camp of observation until such time as the Medical Officer in charge is satisfied that all risk of the occurrence of plague amongst them has been completely abated, and they will then be sent to their homes.

14. In conclusion we forward, for Your Lordship's information, copies of the more important Resolutions recently issued by the Government of Bombay on matters connected with the plague.*

I have, &c.,
ELGIN,
&c., &c.

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* Not reprinted.

Enclosures.

STATEMENT showing BUBONIC PLAGUE CASES and DEATHS (imported as well as indigenous) in the BOMBAY PRESIDENCY reported to GOVERNMENT from September 1896 to week ending 24th December 1897.

1.	2.				3.				4.				5.				6.			
Periods.	Bombay City.				Karachi City.				Poona City, including Suburb and Cantonment.				Ahmedabad District.				Kaira District.			
	Plague Cases.	Plague Deaths.	Total actual Mortality from all Causes.	Total averege Mortality from all Causes.	Plague Cases.	Plague Deaths.	Total actual Mortality from all Causes.	Total average Mortality from all Causes.	Plague Cases.	Plague Deaths.	Total actual Mortality from all Causes.	Total average Mortality from all Causes.	Imported.		Indigenous.		Imported.		Indigenous.	
													Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Total as per Statement for period from September, 1896 to week ending 17th December, 1897.	14,004	11,642	62,274	—	4,170	3,401	8,029	—	8,238	6,028	14,350	—	137	80	25	17	23	18	—	—
During week ending 24th December, 1897.	*206	172	888	676	—	—	88	98	285	250	297	77	—	—	—	—	—	—	—	—
Total	14,210	11,814	63,162	—	4,170	3,401	8,117	—	8,523	6,278	14,647	—	137	80	25	17	23	18	—	—

	7.				8.				9.				10.				11.				12.			
Periods.	Broach District.				Surat District.				Thana District.				Ahmednagar District.				Khandesh District.				Nasik District.			
	Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Total as per Statement for period from September, 1896, to week ending 17th December, 1897.	18	13	1	—	308	215	3,793	2,659	799	423	4,432	3,595	122	90	453	309	40	18	†41	†34	130	96	†1,006	795
During week ending 24th December, 1897.	—	—	—	—	31	31	94	88	2	1	21	15	—	—	65	51	2	2	16	17	4	5	93	70
Total	18	13	1	—	339	246	3,887	2,747	801	424	4,453	3,610	122	90	518	360	42	20	57	51	134	101	1,099	865

* These figures include 4 imported cases.

† Revised in accordance with latest reports.

STATEMENT showing BUBONIC PLAGUE CASES and DEATHS (imported as well as indigenous) in the BOMBAY PRESIDENCY reported to GOVERNMENT from September 1896 to Week ending 24th December 1897—*continued.*

Periods.	13. Poona District, excluding the City.				14. Satara District.				15. Sholápur District.				16. Kolaba District.				17. Ratnagiri District.				18. Belgaum District.			
	Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Total as per Statement for period from September, 1896, to week ending 17th December, 1897.	640	460	2,961	2,198	*376	*313	13,063	*10,020	157	141	2,339	1,875	171	147	1,315	1,141	236	202	148	119	3	2	397	304
During week ending 24th December, 1897.	30	24	74	55	8	5	346	271	32	32	180	197	—	—	12	11	—	—	—	1	1	1	71	54
Total	670	484	3,035	2,253	384	318	13,409	10,291	189	173	2,519	2,072	171	147	1,327	1,152	236	202	148	120	4	3	468	358

Periods.	19. Dharwár District.				20. Kanara District.				21. Bijapur District.				22. Baroda Territory.				23. Kathiawar.				24. Kolhapur.			
	Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Total as per Statement for period from September, 1896, to week ending 17th December, 1897.	7	3	*42	*42	1	—	—	—	3	3	—	—	86	62	649	526	96	47	167	121	20	14	198	134
During week ending 24th December, 1897.	—	—	2	1	—	—	—	—	—	—	—	—	1	—	39	24	—	—	—	—	2	2	34	25
Total	7	3	44	43	1	—	—	—	3	3	—	—	87	62	688	550	96	47	167	121	22	16	232	159

* Revised in accordance with latest reports

STATEMENT showing BUBONIC PLAGUE CASES and DEATHS (imported as well as indigenous) in the BOMBAY PRESIDENCY reported to GOVERNMENT from September 1896 to week ending 24th December, 1897.

Periods.	25 Cutch.				26 Mahi Kantha.				27 Palanpur.				28 Savantvadi.				29 Karachi District, excluding the City.				30 Hyderabad District.			
	Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Total as per Statement for period from September, 1896, to week ending 17th December, 1897.	239	169	6,424	5,536	4	2	—	—	33	10	1,072	691	26	25	—	—	174	129	146	103	69	57	557	423
During week ending 24th December, 1897.	—	—	26	15	—	—	—	—	2	1	112	91	—	—	—	—	—	—	3	3	—	—	—	—
Total	239	169	6,450	5,551	4	2	—	—	35	11	1,184	782	26	25	—	—	174	129	149	106	69	57	557	423

Periods.	31 Shikarpur District.				32 Upper Sind Frontier District.				33 Thar and Parkar.				34 Janjira State.				35 Akalkot State.				36 Plague among Europeans.			
	Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Imported.		Indigenous.		Bombay.		Mofussil.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Total as per Statement for period from September, 1896, to week ending 17th December, 1897 ...	154	103	838	593	3	2	1	1	3	2	—	—	9	4	330	204	15	9	44	31	47	16	*33	†6
During week ending 24th December, 1897.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10	5	—	—	12	10	—	—	‡1	—
Total	154	103	838	593	3	2	1	1	3	2	—	—	9	4	340	209	15	9	56	41	47	16	34	6

* Of these, 5 occurred at Poona, 2 at Ghorpuri in the Poona District, 1 at Ahmedabad, 3 at Karachi, 1 at Cutch Mandvi, 18 in Poona Cantonment, 1 in Kirkee Cantonment, 1 at Sholapur and 1 in Poona Suburban limits.

† Of these, 2 took place at Karachi, 1 at Cutch Mandvi, 2 in Poona Cantonment, and 1 in Kirkee Cantonment.

‡ Occurred in Poona Suburban limits.

From Mons. W. M. HAFFKINE to the SECRETARY TO THE GOVERNMENT OF INDIA (Home Department).

Hardwar, November 20, 1897.

I HAVE the honour to submit a report by Surgeon-Major Lyons and myself on the epidemic of plague in Lower Damaun, and on the effect of preventive inoculation there.

The delay in forwarding this report was due to the fact that while the observations collected in Damaon were being studied and classified, two epidemics occurred, one after another, in Lanowli and in Kirkee, in conditions which permitted of making a very accurate investigation on the effect of inoculation. I decided to delay the preparation of the present report and to take immediate advantage of the two outbreaks for repeating the experiments made in Damaun, and verifying, for a second and for a third time, the results obtained in the former place.

In both epidemics just referred to, as will be seen from the reports to follow, the results were slightly below those obtained in Damaon, which was due to my having been unable, while away in the affected districts, to renew the stock of lymph stored up in Bombay, and to my having had to use material of (gradually) inferior quality when the stronger was exhausted. The effect differed, however, inconsiderably, and represented in Damaon, as will be seen from the adjoined report, a reduction of 89·2 per cent. of the plague mortality, in Lanowli a reduction of 85·7 per cent., and in Kirkee of 77·9 per cent.

2. I beg, sir, to point out, in the submitted report, the following features: The great readiness and spontaneity with which the population came forward for inoculation, without any pressure being brought to bear upon them, except that of the dreaded disease; the rapidity with which the effect of the treatment was perceived and appreciated, and the fact that one assistant, deputed to the place, was able to inoculate in a few days large numbers of people, the inhabitants providing all the necessary accommodation and help. When compared with the circumstances connected with the attempts at destroying the bacilli of plague in villages and in big towns, and at keeping the sick and the healthy away from each other, and from the infected localities, the method of combating the epidemic by inoculation presents inestimable facilities.

3. I shall submit my full reports on the operations in Lanowli and Kirkee—in order to confirm the conviction which imposes itself on studying the Damaun epidemic—as early as my present absence from my office, and the time required for compiling the documents, will allow me. In view, however, of the great urgency of the case, I believe it opportune to consider, for the present, the possibility of Government deciding to introduce preventive inoculation as a means of combating the plague, on lines similar to vaccination,—combining this method, in the commencement, with other measures, but assigning to it, in the programme, a very important part. I give, therefore, below a brief sketch of the organisation necessary for that—

(*a*) The staff sufficient for securing a supply of lymph for India would consist of:—
One Commissioned Medical Officer, as a permanent assistant, who will be trained to carry out and supervise all the laboratory preparations connected with the plague prophylactic,
One Military Assistant Surgeon,
One Apothecary,
One Clerk,
Two Laboratory boys,
**One* Peon, for packing and despatching of parcels, and
One Hamal.

I suppose, of course, that the above staff will be free from any work connected with the actual inoculations, or from any investigation duty, and will devote undividedly their whole time to the manufacturing of lymph.

(*b*) The raw materials necessary for the preparation of one hundred doses of lymph cost below R1.

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* Peon = messenger.

(c) In case the Laboratory remains in Bombay, a house for its accommodation, containing 30 rooms, provided with gas and water, with an extensive compound and several out-houses and stables, is placed at our disposal, free of charge, by His Highness Aga Khan, in a suitable locality of Bombay. If the Laboratory is located elsewhere, accommodation will be required of ten rooms for the preparation and storing up of the plague prophylactic, and of another half dozen rooms for carrying on investigation work.

(d) The actual inoculation should be carried on by the flying columns, or parties at present engaged in combating the plague in the affected districts, and which, with regard to the inoculations, should be subject to the same regulations as are in force for vaccination against small-pox. It is desirable that, in the beginning, in every new place, the inoculations should be started by a Commissioned Medical Officer, whom I shall guide personally in his first set of operations, and whose duty it should be to keep my office informed on the effect produced upon the epidemic. Afterwards, and very soon, the operations will be entrusted to an Assistant Surgeon or a Hospital Assistant.

4. I propose, unless you advise me to the contrary, to remain in Hardwar for the time necessary for ascertaining whether the disease contracted by the monkeys, and which caused only an insignificant mortality among them, is the same as the bubonic plague in men; and to return to Bombay after that.

JOINT REPORT ON THE EPIDEMIC OF PLAGUE IN LOWER DAMAUN, PORTUGUESE INDIA, AND ON THE EFFECT OF PREVENTIVE INOCULATION THERE.

BY MONS. W. M. HAFFKINE AND SURGEON-MAJOR LYONS, I.M.S., PRESIDENT.

Government Committee for Investigation of the Bubonic Plague in Bombay.

The plague prophylactic referred to in the present report has been described by Mons. W. M. Haffkine in the "British Medical Journal," May 1897, and in the "Indian Medical Gazette," June 1897.

The facts reported here have been collected by Professors Koch and Gaffky, the heads of the German Scientific Mission to Bombay, and Monsieur Haffkine, on a visit to Damaun on the 20th and 21st May last; at the end of the same month a house-to-house visitation at Damaun was undertaken and carried out, at Monsieur Haffkine's request, by Surgeon-Major Lyons, President of the Bubonic Plague Research Committee, in order to complete, by exact details, the information gathered on the first visit.

At the German Scientists and Monsieur Haffkine's inquiry at Damaun, their informants were:—

His Excellency Col. J. P. Kuchenbuck Villar, Governor of Damaun;
Mr. Judge, Assistant Collector, Salt and Revenue Department, in charge of the Preventive Police and the Plague Operations on the Damaun Frontier;
Shet Sorabjee Manockjee Damaunwalla, head of the Parsee community, assisted by his Secretary;
Dr. Virgilio Poiares, Physician in charge of the Plague Hospital;
Dr. Proença, Health Officer;
Dr. Pinto, in charge of the Plague Operations in Damaun Town; and
Dr. Da Cunha, L.R.C.P. (Edinburgh), } Medical Practitioners of Damaun.
Dr. Moniz, L.M.S., and }
Dr. Fernandez, }

The Medical Officers above mentioned were assembled, on the 20th May, 1897, by H. E. the Governor, who was also present, and to whom we are indebted for affording every facility for making the inquiry complete. The general information given below, in the preliminary part of this report, was reported at this meeting and was supplemented by documents from the respective offices.

The history of the Damaun epidemic appears to be as follows :—

The town of Damaun is divided by a river into two parts : Lower Damaun, the largest business part of the town ; and the Fort, or upper Damaun, where the Government house and the Government offices are situated. The plague attacked almost exclusively three of the villages which make part of Lower Damaun, namely, Lower Damaun proper, having, in ordinary times, a population of 5,000 inhabitants ; Katheria, the property of Shet Sorabjee Damaunwalla, with a population of 4,700 ; and Khadiwadi, with a population of 1,200. This part of the town was in active business communication with the Bombay Presidency, and is densely populated, the inhabitants living in small houses crowded together. The Fort was cut off by a cordon from Lower Damaun as soon as the epidemic began to increase in proportion, and had only some half dozen imported cases.

The first attacks came to notice in February last, and occurred amongst new arrivals from Bulsar, a neighbouring town which was badly affected at the time, and amongst sailors from Kurrachee arriving at Damaun by sea, in native crafts. Before the end of the same month local cases began to appear among the fishermen, who have their *busti* close to the river, where crafts are moored, behind the Damaun Municipal School. In the last days of the month a hurried exodus of people began from Lower Damaun, increasing daily as the epidemic gained in intensity, until, on the 23rd of March, the Governor placed a cordon along the river, and stopped communication between the lower and upper parts of the town ; while a week later, on the 30th March, the Bombay Government, on their part, closed British territory to the inhabitants of Damaun. By this time it was estimated over 2,000 people had quitted the place.

The worst period of the epidemic corresponded to the month following the closing of the Damaun frontiers. The climax was reached in the middle of April, when the daily number of deaths remained stationary for about 8 days and then began to decline. The largest number of deaths which occurred in one day was 80.

Up to the 25th of April the daily mortality, which was closely watched by the Parsee community, who kept peons on the burial and burning grounds, was recorded officially from the information given by the inhabitants coming to the Registration Office to declare cases of deaths in their families. On the 25th April the Governor placed a guard of his own on the burial and burning grounds, and on that day, though the number of deaths reported by the inhabitants was 11, the number of bodies disposed of in the presence of the guard was 34. From the above date the Governor's guard was kept permanently on the grounds, and the official information became complete. The following is the number of bodies registered by this means from the 25th April up to the date of investigation :—

25th April 1897	34	8th May 1897	33
26th "	31	9th "	18
27th "	21	10th "	24
28th "	49	11th "	27
29th "	41	12th "	15
30th "	58	13th "	13
		14th "	17
1st May 1897	41	15th "	13
2nd "	22	16th "	20
3rd "	29	17th "	6
4th "	47	18th "	8
5th "	33	19th "	13
6th "	31		
7th "	31	25 days.	675 deaths.

Thus, during the 25 days preceding our visit, *i.e.*, between the 25th April and 19th May 1897, at a time when the population was considerably thinned by desertion and death, and when the mortality had dropped to 8 and 6 a day, the total number of bodies disposed of was 675, giving an average of *25 deaths a day.* His Excellency the Governor and the medical gentlemen present at the meeting stated that they would be well within the real figure if they estimated the number of deaths which occurred in the fully populated town in the first period and during the height of the epidemic, *i.e.*, up to the time of placing the guard, at an average *of 30 a day*, counting from the 1st March and neglecting the mortality before that date. This estimate gives a total of 2,325 deaths as having occurred in Damaun from the beginning of the epidemic up to the time of the Scientific Committee's visit. Of this number, 2,093 deaths were afterwards authenticated in the particular families where they had taken place, during a house-to-house enquiry instituted by Shet Sorabjee Damaunwalla, the owner of Katheria.*

As the immunity of the inoculated in Damaun will be estimated from a comparison with the mortality in the uninoculated population, it is essential, in order to avoid the possibility of exaggerating the power of inoculation, to take for guidance the lowest figure admissible as representing the real death-rate in the place. In the following calculations, therefore, the number of deaths from plague which occurred in Damaun from the commencement of the epidemic up to the visit of the Scientific Committee is accepted as 2,093, which is the number authenticated by an enquiry in each of the affected families. This figure gives an average daily mortality from the commencement of the epidemic up to the time of placing guards on the burial and burning grounds, as being close upon 26 deaths a day. From the 21st of May up to the end of the same month, that is to say, up to the date when Surgeon-Major Lyons concluded the additional enquiry, of which the details are given below, there occurred 96 deaths more, giving a total of 2,189 deaths from plague which took place in Damaun during the period under observation.

In this number of deaths there were 24 in those inoculated, personally observed by the Medical Officers of the place; *plus* a small number of others of which they knew, but which they had not seen personally. 15 deaths of the 24 were reported by Dr. Moniz, who was said to have treated the largest number of plague patients in the place; 4 by Dr. Poiares, who also saw 4 other cases which recovered; 3 cases by Dr. Proença, all of whom recovered (these had been seen also by Dr. DaCunha); 3 deaths were known to Dr. DaCunha, and 2 to Dr. Pinto (in addition to 1 mentioned by Dr. Moniz which Dr. Pinto had seen with him).

Considering the small extent of the town, the limited number of inhabitants, and the number of Medical Officers who were looking after the place, it appeared probable that not many attacks among the inoculated escaped their notice, as such attacks usually excite much comment amongst the inhabitants and attract general attention. Indeed, the gentlemen present at the meeting seemed to know between them every place in the town where inoculated people lived, and every house which had suffered from plague or happened to have escaped. As has been mentioned already, they stated at the time that there was a small number of inoculated attacked whom they did not see, but of whom, they informed us, a record existed in the office of Shet Sorabjee Damaunwalla, where, during the plague, a dispensary was opened for distributing gratuitous medicines to the affected population.

It was on the initiative of that Parsee gentleman that the inoculations were introduced. He had a personal knowledge of the people who were inoculated, and kept a watch over the effect of the operation, collecting, with the help of his office establishment, a large number of details in this connection.

From his information it appeared that the total number of deaths amongst the inoculated was under 40, each of the cases being known to him; that amongst those

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* The number of deaths from plague which took place during the *whole* epidemic up to the end of July, and a record of which could be obtained by an enquiry in the households, was 2,352, and was distributed amongst the different castes inhabiting Damaun, as follows :—

Parsees	6	Tailors	48
Brahmins	26	Ghatis	21
Parbhus	4	Potters	16
Shrawaks	11	Portuguese	34
Banias	23	Bhandarees	22
Lohanas	4	Bhayas	5
Gujrathi Goldsmiths	15	Bhateli	1
Daxini Goldsmiths	80	Dhobis	16
Hindu Barbers	27	Mochis	23
Khatris	87	Kolis	19
Coppersmiths	11	Borahs	5
Machis	600	Khojas	4
Carpenters	104	Lohars	13
Mussalmans	440	Mangelas	7
Golas	106	Hindoo Low Castes	351
Chhipas	23	Caste unknown	200
		Total ...	2,352

inoculated in a first series of inoculation, done in March last, a smaller proportion got affected and died than amongst those done a month later; and that in a series of inoculations carried out by the physician in charge of the Damaun Plague Hospital, with lymph supplied from our Bombay laboratory, the number of attacks was larger than amongst those inoculated by Dr. Kalapesi, Dr. Haffkine's assistant, sent from the Laboratory. These details were found afterwards, in the course of the close investigation carried out by us, to be scrupulously correct.

Mr. Sorabjee had also a guard of his own kept on the burial and burning grounds, watching the course of the mortality, and his information concurred with the statements recorded above. The number of people inoculated up to the time of the Scientific Committee's visit was 1,645; over four times that number remained uninoculated. The latter had lost from plague close upon one-third of their number, and, he considered, there could be no doubt that the inoculated exhibited a most striking degree of immunity.

The effects of inoculation were closely watched by the inhabitants as will be seen from the following observations which they brought to our notice.

There were altogether 306 Parsees in Lower Damaun, including males, females and children. Of these, 276 were inoculated twice, and one once, all the particulars being given in our inoculation register. The names and particulars of the 29 who remained uninoculated were supplied to us on the spot. The attacks and casualties from plague which occurred in the two groups after the introduction of inoculation are given below.* No deaths from any other cause occurred in the community from the beginning of the epidemic.

Occurrences of plague amongst the 277 inoculated Parsees.

(1) Jerbai, wife of Manekji Pacha, age 35, belonging to a well-to-do family; was five months' pregnant; inoculated once on 17th April 1897, in the right arm. For about 24 hours before, she had fever and pain in the groin, but this was not known at the time of inoculation. Developed characteristic plague in the evening of the day of inocalation, had an abortion on 20th morning, died same day.

(2) Seven other Parsees inoculated were attacked, respectively, three days, one week, twelve days, a fortnight, one month, one month and five weeks after inoculation, but all these recovered.

Occurrences of plague amongst the 29 uninoculated Parsees.

(1) Nanabhai Jivajee, male, age 60, belonging to a well-to-do family where all the other members (14 in number), except himself, were inoculated. Attacked on 16th April 1897; bubo in left groin; died on 20th.

(2) Merbai, daughter of Bairamjee, age 20 years, of a well-to-do family, where eight members were inoculated and four, including Merbai, were not inoculated; attacked about same time as Nanabhai Jivajee; bubo in right groin; died on 20th April.

(3) Ratanbai Rantanjee, female, age 35, of a well-to-do family; attacked and died in the first days of May 1897, having had fever and a bubo.

(4) An old woman, Avabai, widow of Rustomjee, age about 75 years, of a well-to-do family, where fourteen others were inoculated, Avabai and Gulbai, her daughter-in-law, being the only uninoculated. Avabai got attacked on 11th May, developed bubo two days later, died on the 13th.

Thus in the 29 uninoculated Parsees there were 4 deaths from plague, or a mortality of 13·8 per cent., while in the 277 inoculated there were 8 attacks, with only 1 death, the one who died being a woman attacked *before* inoculation, and the mortality thus produced in the inoculated being 0·36 per cent., or 38·3 times lower than in the uninoculated.

Another significant instance, in a limited number of people, was furnished by the servants belonging to Shet Sorabjee's house and to his garden. There are 50 servants in the house where he lives and about 150 in his garden, half a mile distant from the house. Round the garden the epidemic was raging violently. Of the whole number of servants, one, a deformed individual, remained uninoculated. All the others were inoculated twice. Plague appeared among the servants on the 16th May, when the only person uninoculated was attacked and succumbed on the 19th. The total number of inoculated lost also one, a child of 4 years.

The other instances given were in isolated families and referred to smaller numbers of people.

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* *See* also attached Rolls. Not reprinted.

The German Commissioners completed this part of the inquiry by collecting information as to the soil of Upper and Lower Damaun, the hydrographic and climatic conditions obtaining in both, their comparative hygienic circumstances, etc. The facts supplied on these points were of an approximate character. The Committee returned to Bombay on the morning of the 22nd May.

Surgeon-Major Lyons went to Lower Damaun on the 26th May, 1897, the object of his visit being to find out accurately, by a minute inquiry in each house, the number of deaths which occurred amongst those inoculated. For this purpose he divided the town into four sections, and during four days, between the 26th and 30th May, 1897, visited all the houses, section by section. And as a number of dwellings had been vacated and the inhabitants encamped in the fields outside the town, Dr. Lyons visited them in their encampments and collected information from all of them. The frontier around the town being closed and guarded by a British and a Portuguese cordon, the conditions for collecting the necessary information were particularly complete.

In this manner Dr. Lyons collected the history of 33 deaths and 54 attacks with recovery which had occurred in the inoculated up to the 19th May (the time of the Scientific Committee's visit), and of 3 deaths* and 1 attack with recovery which occurred between that date and the 31st of May inclusive.

In the Appendix † are reproduced 88 "Investigation Sheets," filled up by Dr. Lyons during the house-to-house visitation, as well as one sent afterwards by His Excellency the Governor. Each of the investigation sheets contains particulars of a house where inoculated people lived and where cases of plague had occurred, either among the inoculated or the uninoculated members of the family. These sheets, therefore, do not make mention of the inoculated households where no cases of plague occurred, nor of any of the attacked houses where there were no inoculated persons.

Comparative Analysis of the Mortality from Plague in Lower Damaun, in the inoculated and uninoculated between the 26th *March and the end of May* 1897.

The inoculations in Damaun were done in four series:

First Series.—Between the 23rd and 26th March 1897, 846 persons were inoculated by Dr. R. M. Kalapesi, who was sent from the Laboratory, and between the 4th and 7th April, 171 persons by the Portuguese Physician in charge of the Plague Hospital in Damaun, Dr. Virgilio Poiares, who was supplied with material also from the Bombay Laboratory. The lymph used by Drs. Kalapesi and Poiares on that occasion, as will be described later on, was prepared from a strong virus, and produced a high febrile reaction when injected in the prescribed small standard doses. The operations of these two gentlemen differed in that Dr. Poiares gave doses much weaker than those given by Dr. Kalapesi, as is shown by the detailed records of their operations. It will be observed from the results given below that, though Dr. Poiares' patients appear to have given a considerable reduction of mortality when compared with the rest of the population, the results from his small doses were lower than those obtained from the same material given in larger doses.

Second Series.—A few weeks after the first series, the demand for further inoculations coming from Damaun became exceedingly persistent, as was the case, after an interval, in the six other places where inoculations were performed,—in Bombay, Mora, Damaun, Poona, Balsar and Tarapore; and though the Laboratory had run short of strong material, Dr. Kalapesi was deputed again, with a much weaker lymph than that used on the first occasion, as will be detailed later on. Between the 17th and 27th April, *i.e.*, about a month after his first visit, he performed 529 fresh inoculations, and between the 24th April and 2nd May 1897, 99 more were done by Dr. Poiares with a similar material obtained for him from the Bombay Laboratory by the Bombay Portuguese Consulate. The lymph used on this occasion, even when injected in doses 2 to 3 times larger than the standard ones, failed to produce marked rise of temperature, though it caused considerable local reaction. As will be seen below, both Dr. Kalapesi's and Dr. Poiares' operations, on this occasion, gave a smaller lowering of mortality than those previously performed, though they had both been working with increased doses.

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* In this number of 3 deaths is included one additional, in the person of Ghopal Bicaria, 9 years, communicated by Dr. Fernandez through H. E., the Governor of Damaun.

† Not reprinted.

Third Series.—Between the 21st and 23rd of May Dr. Kalapesi inoculated 362 persons with a similarly weak lymph, while Dr. DaCunha, another Portuguese Physician, who had been working in Damaun with Dr. Kalapesi, inoculated 190 persons with the same material.

Fourth Series.—Lastly, in August last, Dr. DaCunha inoculated over 100 persons with material supplied to him from the Bombay Laboratory.

Thus, altogether 2,297 persons were inoculated in Lower Damaun.

The visit of the Scientific Committee coincided with the time of the third series of inoculation, and Dr. Lyons' investigation extended to twelve days later, when the worst part of the epidemic was over, and the daily mortality had come down to below a dozen a day. The present analysis refers, therefore, to the occurrence of attacks and deaths amongst the 2,197 inoculated on the first three occasions, and is divided into three periods of observation, the first corresponding to the interval between the first and second series of inoculations, the second to the interval between the second and third series, and the third to the interval between the third series and the end of the month of May 1897, when the investigation was concluded.

First Period (between the First and Second Series of Inoculations).

At the time when the first series of inoculations was completed, the 26th March 1897, the total number of inhabitants in the affected villages of Damaun, namely 10,900 had been reduced by 670, who had died of plague before that time, and by about 2,000 who had left the place before the closing of the frontiers.

Of the 8,230 remaining, 846 were inoculated by Dr. Kalapesi and 171 by Dr. Poiares in their first series of inoculations, while 7,213 remained uninoculated.

From that time up to the time when the second series of inoculations was completed, *i.e.*, the 23rd of April, the following were the occurrences in the respective groups of people:—

(*a*) Amongst the 846 inoculated by Dr. Kalapesi, there were 17 cases with 3 deaths. (Total mortality, 0·4 per cent.; case mortality, *i.e.*, percentage of deaths to attacks, 17·6 per cent.)

(*b*) Amongst the 171 inoculated by Dr. Poiares, there were 6 cases with 3 deaths. (Total mortality, 1·8 per cent.; case mortality, 50 per cent.)

(*c*) Amongst the 7,215 uninoculated, there were 716 deaths.* (Total mortality, 9·9 per cent.)

It will be seen that, if the 1,017 inoculated had exhibited the same susceptibility for plague as the uninoculated, and had had the same mortality of 9·9 per cent., the number of deaths amongst them would have been 101 instead of 6, a difference of 94·1 per cent.

Second Period (between the Second Series of inoculation and the Third Series, or the time of the Scientific Committee's visit.)

By the time when the second series of inoculations was completed, the number of those inoculated by Dr. Kalapesi had decreased by the 3 deaths mentioned above, and increased by 529 newly inoculated, giving a total of 1,372.

The number of inoculated by Dr. Poiares had decreased by 3 deaths, and increased by 99 newly inoculated, giving a total of 267.

The number of uninoculated had decreased by 716 deaths and by the 628 newly inoculated, leaving a total of 5,869 uninoculated.

From the time of the second series of inoculations up to the time of the Scientific Committee's visit, *viz.*, 19th of May last, the following where the occurrences in the three groups:

(*a*) Amongst the 1,372 inoculated by Dr. Kalapesi, there were 52 cases with 18 deaths. (Total mortality, 1·3 per cent.; case mortality, 34·6 per cent.)

(*b*) Amongst the 267 inoculated by Dr. Poiares, there were 12 cases with 9 deaths. (Total mortality, 3·3 per cent.; case mortality, 75 per cent.)

(*c*) Amongst the 5,869 uninoculated, there were 674 deaths. (Total mortality, 11·5 per cent.)

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* As a matter of fact, much more than that, the figure 716 deaths, 9·9 per cent., implying that during the initial three weeks of the epidemic, before the introduction of inoculation and during the first period of 4 weeks after the inoculations, the worst period in the whole epidemic, the mortality was uniformly 26 deaths a day, which of course was not the case.

It will be observed that if during the second period of observation the 1,659 inoculated had had the same mortality as the 5,869 uninoculated, they should have lost 188 instead of 27, which represents a difference of 85·6 per cent.

Third Period (between the Third Series of inoculations and the end of May, or the time when Surgeon-Major Lyons concluded his investigation).

At the time of the Scientific Committee's visit to Damaun, the number of inoculated by Dr. Kalapesi had decreased by 18 deaths, and increased by 552 inoculated by him and Dr. DaCunha, giving a total of 1,906.

The number of inoculated by Dr. Poiares has decreased by 9 deaths, leaving a total of 258 inoculated.

The number of uninoculated had decreased by 674 deaths and by 552 who got themselves inoculated, leaving 4,643 uninoculated.

During the 12 days which elapsed till Dr. Lyons completed his investigation, these groups produced—

(*a*) The 1,906 inoculated by Dr. Kalapesi, 1 case with 1 death. (Mortality 0·05 per cent.)

(*b*) The 258 inoculated by Dr. Poiares, 3 cases with 2 deaths. (Mortality 0·8 per cent.)

(*c*) The 4,643 uninoculated—93 deaths. (Mortality 2 per cent.)

Calculating upon the death-rate amongst the uninoculated, the 2,164 inoculated should have had 43 deaths instead of the 3, which is a difference of 93 per cent.

During the three periods of observation put together, between the 26th March and the end of May, 6,033 uninoculated had 1,482 deaths (24·6 per cent.) while 2,197 inoculated had 36 deaths (1·6 per cent.). Calculating upon the death-rate among the uninoculated we have seen that the inoculated should have had altogether 332 deaths instead of 36. This represents a difference in mortality of 89·2 per cent.

Considering the large proportion in which the number of inoculated stands to the rest of the population (2,197 to 6,033), it is evidently impossible that the inoculated represented the upper, or any other particular, class of the population possessing a degree of personal or local immunity much different from that of the rest of the population, and to which their reduced death-rate could be ascribed.

This view is confirmed by the following comparison of the mortality which occurred in the inoculated and uninoculated persons belonging to the same families, who lived therefore under absolutely identical conditions of life.

In a large number of households the whole of the members of the family were inoculated, leaving none for comparison as regards susceptibility to the disease. This circumstance rendered it necessary to compare the whole inoculated population with the whole of the uninoculated population, as has been done above. However, in 62 of the inoculated families in which cases occurred, there were 124 persons who remained uninoculated, while the number of inoculated in these families was 250. A comparison between this fraction of the inoculated population with their uninoculated relatives shows the following result:

124 uninoculated had 54 cases (43·5 per cent.) with 37 deaths (29·8 per cent., case mortality 68·5 per cent.)

250 inoculated had 50 cases (20 per cent.) with 20 deaths (8 per cent., case mortality 40 per cent.)

The inoculated households lived, therefore, under no specially immune conditions, as the mortality among their uninoculated members, 29·8 per cent., was 5·2 per cent. higher than the mortality in the general uninoculated population. This must invariably be the case, as only people from badly-affected or particularly-threatened localities present themselves for inoculation. It will be noticed also that this small number of 124 uninoculated had a mortality higher by 1 death than the total mortality sustained by the 2,197 inoculated inhabitants of Damaun; and that a comparison between the inoculated and the uninoculated members of these families shows that if the 250 inoculated had exhibited the same susceptibility as their 124 uninoculated relatives, they should have had 75 deaths instead of 20, a difference of 73·3 per cent.*

A similar conclusion is arrived at on comparing the mortality in the Parsee community quoted above, and which shows that the inoculated members gave a reduction of 97·4 per cent. of deaths when compared with the uninoculated of the same community.

It has been mentioned that the lymph used in Damaun in the first series of inoculations was of an active stock, prepared from a highly virulent microbe, and produced a brisk febrile reaction when used in relatively small doses. Owing to the great pressure of work during the epidemic, no method for keeping up the strength of the plague bacilli has been worked out, and the microbe from which the plague lymph was manufactured, was allowed to gradually sink in virulence till it became almost harmless when inoculated into rodents. It was lymph thus weakened that was used in the subsequent inoculations.

A comparison between the first and second series of inoculations† done with the strong and with the weak vaccines, respectively, shows a difference in result in direct correspondence with the difference in the material used, as will be seen from the following table :—

1,017 inoculated on the first occasion had 49 cases (4·8 per cent.) with 15 deaths (1·5 per cent., case mortality 30·6 per cent.).

628 inoculated on the second occasion had 41 cases (6·5 per cent.) with 20 deaths (3·2 per cent., case mortality 48·8 per cent.).

The total mortality and the percentage of deaths to cases amongst the inoculated on the second occasion, though they were exposed to the risk of infection during the milder period of the epidemic, was, respectively, 2·2 and 1·6 times higher than amongst those inoculated on the first occasion.

Also as mentioned already, Dr. Poiares in his operations used doses considerably lower than those given by Dr. Kalapesi. The difference in the results of these two groups of operations corresponded again to the difference in the method employed, as is seen below :—

Amongst the 1,924 inoculated by Dr. Kalapesi, there were 70 cases (3·6 per cent.) with 22 deaths (1·1 per cent., case mortality 31·4 per cent.).

Amongst the 270 inoculated by Dr. Poiares, there were 21 cases (7·8 per cent.) with 14 deaths (5·2 per cent., case mortality 66·7 per cent.).

Thus, amongst the inoculated with reduced doses, small though their death-rate (5·2 per cent.) was when compared with the death-rate in the uninoculated population (24·6 per cent.), the total mortality was 4·5 times, and the case mortality 2·1 times higher than that amongst the inoculated with larger doses.

This variation of the results, answering faithfully to the variation in the strength of the lymph and in the doses given, shows the direct connection of cause and effect in the two series of facts, and makes it probable that it will be in our power to improve upon the results obtained in Damaun.

It also indicates, when the actual figures are examined, that the plague prophylactic has a greater influence upon the number of deaths than upon the number of attacks. This result repeated itself in all the observations collected up to the present on the plague inoculation, and seems to stand in a comprehensible connection with the plan followed in working it out. If this surmise is correct, it will be in our will to effect a further reduction in the number of attacks by correspondingly modifying the composition of the plague prophylactic.

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* As far as the small numbers from which the figure 73·3 per cent. is obtained permit of drawing conclusions, the comparison between this figure and 89·2 per cent. by which the mortality in the *total* inoculated population differed from the mortality in the *total* uninoculated, would seem to indicate that the presence of uninoculated members in a family reduces the safety of the inoculated, and that, like in small pox vaccination, the duty of the individual is to be inoculated for the safety of his neighbours in the community.

† The third series, done shortly before the conclusion of the observations, is left out of this comparison, only one death having occurred amongst those inoculated on the third occasion.

The above satisfactory results were obtained in one of the most virulent outbreaks that have been observed in India in the present epidemic, and during the 9 weeks which corresponded to the highest stage of that outbreak.

The question as to the final duration of the effect of the plague inoculation remains unsolved, but loses its urgent interest in view of the above results.

(Signed) W. M. HAFFKINE.
(Signed) R. W. S. LYONS, SURGEON-MAJOR, I.M.S.

Dated Bombay, 22nd December, 1897.

From MON. W. M. HAFFKINE to the SECRETARY TO THE GOVERNMENT OF INDIA, Home Department.

IN continuation of my letter to you, dated Hardwar, 23rd November, 1897, I have addressed to-day to the Secretary to the Surgeon-General with the Government of Bombay the following letter:—

"I have the honour to invite your attention to the joint report on the epidemic of plague in Lower Damaun and on the effect of preventive inoculation there by the President of the Bubonic Plague Research Committee and myself, sent to your address from Hardwar on the 18th November last, and to enquire whether any action is being contemplated with regard to the introduction of anti-plague inoculation in affected areas.

"It will be noted that the results of the inoculations done in Damaun are in conformity with those which were observed in the outbreak of plague in the Byculla House of Correction in January last, and with the information obtained from the inoculated in Bombay during the plague epidemic of the first part of this year. As you are aware, I have afterwards tested the method again in two subsequent epidemics at Lonavla and Kirkee, where the inoculations, according to my most careful enquiries, appear to have lowered the mortality not less than by 85·7 and 77·9 per cent. respectively. As far as it is permitted to judge from these results, we have in the inoculations an extremely powerful and rapidly acting weapon for combating the plague, the application of the method being incomparably easier and more certain than any machinery of isolation and disinfection which can ever be put in work in big centres of population. I believe, therefore, that it is a matter of very great urgency that a scheme should be considered and worked out for the gradual introduction of the inoculations in all the affected areas as the specific measure for combating the existing epidemic.

"I have scarcely to point out that the plague has now been raging in Poona for the past three months without any signs of diminution, and has resulted in the desertion of the largest part of the population and in the seizure of some 6,000 and the death of 4,500 people, in spite of the most earnest and persistent measures. There is in the Presidency a number of affected or closely threatened places of almost equal importance as Poona, such as Belgaum, Surat, Sholapur, the neighbourhood of Karad, Hubli, Wai. The initiative taken by His Highness Aga Khan with regard to the plague in Poona and the introduction of preventive inoculation there by means of hired outside agents; the attached copies of a letter by the Municipal Commissioner for the City of Bombay; of a telegram from Surgeon-Major Foreman, Belgaum; of a letter from Mr. Vyankatesh R. Mudholkar, Editor of *Vaidharbha*, and Dr. Ramchandra N. Mudholkar, Brahmin gentlemen from Amraoti; of a letter from Mr. Prabhakar Vasudeo Palnitkar, Brahmin gentlemen from Poona, are persistent indications that people ask for help, which, under the present conditions, without any organisation existing for carrying out the inoculations, it is impossible for us to render.

"I beg, therefore, to request the favour of the Surgeon-General considering the feasibility of the following suggestions:—

"A certain number of responsible officers should be appointed to carry out the inoculations in the affected districts, and, if possible, the selection should at first be made either from amongst the officers of the Indian Medical Staff or the medical men sent out lately from England by the Secretary of State for plague duty here. To assist them in dealing with the people and also in keeping detailed records of their operations, it would be sufficient to provide each of them with a competent clerk as interpreter. In the course of their work these gentlemen can instruct in carrying on the inoculations private practitioners or the European and Native Officers of the Subordinate Medical Service, to whom the work may be handed over later on, when the people will get more familiar with the inoculations.

"In order to bring to the knowledge of the population this method of combating the disease, analogous to vaccination against small-pox, the Government be requested to be pleased to direct the District Officers to publish the data reported by this Laboratory on the effect of inoculation, so that the knowledge of the advantages to be expected therefrom may be diffused among the native officials and the masses of the population. The mamlatdars and patels be asked to render assistance to the operators, without, however, in any way forcing the people to undergo inoculation or exaggerating the amount of success derived from it, as defined by the figures given above.

"It is desirable, further, that facilities should be given to the inoculated with regard to detention under observation or restrictions upon the freedom of travelling, as requested in many letters addressed to this Laboratory, a copy of one of which is attached to the present letter (Enclosure No. 4). Such measures have already been taken in different places by the local authorities, as is also to be seen from one of the attached documents (*vide* Enclosure No. 5). It is desirable that any measures of this kind, if judged admissible, be made general and published for the information of the public, as they are a powerful inducement for the people to avail themselves of the protection by inoculation.

"That it is easy, in spite of all adverse expectations which may be formed by those who have had no personal experience in the matter, to perform numberless operations in the affected districts, is proved by my personal experience in Bombay, Mora, Bulsar, Tarapur, Damaun, Lonavla, Kirkee, where it was found that, after the first series of inoculations performed, the people perceive rapidly their protective effect, and come forward eagerly, without pressure being brought to bear upon them. I need scarcely add also that this testimony acquires weight from my four years of anti-cholera inoculations, applied in some 150 towns and villages inhabited by all kinds of races of India.

"I have no doubt that the Surgeon-General will appreciate, from the above considerations as well as from the explanations which I had the pleasure of giving him personally, how very urgent this matter is, seeing the many hundreds of preventible deaths which occur daily, and bearing in mind that the experience gained up to now in this Laboratory entitles us to hope that, by a series of inoculations, of which many thousands can be performed in a single hour, the mortality from plague may be reduced instantly by 4/5ths of its extent.

"2. It is to be understood that the present suggestions are independent of the scheme now contemplated by Government, of organising a small committee under my direction for the purpose of studying the life history of the plague microbe, which problem, as I have notified to the Director General of the Indian Medical Service, I shall be happy to undertake. This scheme is referred to in another letter addressed to you simultaneously with the present one." (Enclosure No. 6.)

(Enclosure No. 1.)

No. 23755, dated Bombay, 16th December, 1897.

From P. C. H. SNOW, Esq., I.C.S., Municipal Commissioner, Bombay, to Professor W. M. HAFFKINE.

In view of the increase of plague during the past week, I have the honour to request the favour of your arranging to open as early as possible a central station for inoculation by your prophylactic. Perhaps His Highness Aga Khan's bungalow in Nesbit Lane may be utilized for the purpose.

Enclosure No. 2.

Telegram from Surgeon-Major FOREMAN, Belgaum, to Dr. HAFFKINE, Bombay.

Commissioner wired 500. Think can get more. Come if possible. Will help you every way I can. Pleased to put you up.

Enclosure No. 3.

DEAR SIR, Amraoty, 6th December 1897.

Your efforts in the direction of preventing the spread of the plague by the process of inoculation are highly spoken of everywhere.

We beg you, therefore, to be kind enough to supply us the information about the following particulars at your earliest convenience :—

(a) Whether you have got any statistical results collected with you as to the effect of the process of inoculation.
(b) Whether you can send them to us.
(c) If you have not such results collected, whether you can let us know the source where we can get such information.

(2) What is the cost of each person's inoculation.

(3) Whether it will be necessary for us to come down to Bombay to get ourselves inoculated, or you can arrange to inoculate us here.

(4) What is the period during which the results of inoculation last.

We beg to let you know that our province is not yet affected by the plague ; it is hovering on the borders of the province, and we think it to be advisable to take the preventive step before it reaches us.

Hoping, therefore, you will be kind enough to inform us about the above referred to particulars.

We beg to remain, &c.,
VYANKATESH R. MUDHOLKAR,
Editor "Vaidarbha."

RAMCHANDRA N. MUDHOLKAR, L.M.S.,
Medical Practitioner.

Enclosure No. 4.

RESPECTED SIR, 13th December 1897.

Will you have the kindness to let me know in short the rules pertaining an inoculated person when travelling by railway. Please let me know about the following :—

(1) Whether he is kept in quarantines at different places.
(2) Whether he is segregated, if any plague case occurred in his house.
(3) Whether he is obliged to bathe on railway stations where such system is now-a-days going on.

Sir, I do not know even a bit about the above rules ; and I want to go to my native place from Poona. I have inoculated in the Sassoon General Hospital on the 7th December, and I again wish to inoculate on the next Saturday. Sir, if the above rules be favourable, my (25) twenty-five friends are also willing to inoculate and lots of other men also ; so I hope that your Honour will be kind enough to let me know the above rules ; for which act of kindness I shall be ever indebted to your Honour.

I beg to remain, &c.,
PRABHAKAR VASUDEO PALINKAR,
In Badhwar Peth Kale's Wada No. 452,
Poona City.

Enclosure No. 5.

Extract from letter No. 908, dated $\frac{10\text{th}}{12\text{th}}$ *December 1897, from the Medical Officer, Plague Flying Column No. II, Karad, to Professor W. M. Haffkine, Bombay.*

" The persons who are at present being inoculated are chiefly residents in Karad town who wish to go to infected villages round Karad for trade purposes. These are granted passes on condition they submit to inoculation."

Enclosure No. 6.

Dated Bombay, 22nd December 1897.

From Mon. W. M. HAFFKINE to the Secretary to the Surgeon-General with the Government of Bombay.

I have the honour to enclose, for the information of the Surgeon-General, and return when done with, a telegram and letter received from Mr. H. M. Judge, Assistant Collector, Salt Revenue, Surat, asking for information as to the action of perchloride of mercury solution in the presence of cowdung.

The officers appointed to carry out the prescribed programme of combating the plague are constantly confronted with difficulties of this nature and refer to this laboratory for advice. The answers, in many instances, can, however, be obtained only by new experimental work, for which my present establishment is not sufficient. I would, therefore, inquire, in order to enable me to reply to the correspondence on this subject, whether the scheme, communicated to me by the Director-General, Indian Medical Service, of placing a small Committee of Medical Officers under me for the purpose of investigating the life history of the plague bacilli, is about to be carried out?

Among the Medical Officers sent out by the Secretary of State for plague duty, the following have brought letters recommending them for laboratory work, or have expressed a wish to engage in such work :—

Dr. Maitland Gibson,
Dr. Balfour Stewart, and
Dr. Marsh.

I beg to place before the Surgeon-General these names and the letters, in order that, in case the scheme in question is sanctioned, the selection might be made of or from among the above officers, or others whom the Surgeon-General may think fit.

No. 2713, dated Calcutta, 22nd December 1897.

From J. P. HEWETT, Esq., C.I.E., Secretary to the Government of India, Home Department, to the Secretary to the Government of Bombay, General Department.

I am directed to forward, for the information of the Governor in Council, the accompanying copy of a letter, dated the 20th November 1897, from Mons. W. M. Haffkine, in which he suggests a system for preventive inoculation against plague on an extensive scale. M. Haffkine has been instructed to address the Government of Bombay on the subject of his proposals. The result of the inoculations performed at Damán, described in the joint report prepared by M. Haffkine and Surgeon-Major Lyons, appears to the Government of India to be distinctly encouraging, and they have no doubt that the Government of Bombay will afford M. Haffkine all practicable assistance in making a further trial of his system in the localities in the Bombay Presidency, which are at present infected with plague.

No. 2714, dated Calcutta, 22nd December 1897.

From J. P. HEWETT, Esq., C.I.E., Secretary to the Government of India, Home Department, to Mons. W. M. HAFFKINE, Hardwar.

I am directed to acknowledge the receipt of your letter, dated the 20th November 1897, forwarding a joint report prepared by Surgeon-Major Lyons and yourself on the epidemic of plague in Lower Damán, and on the result of preventive inoculation performed there.

The Government of India have, I am to say, read your report with the greatest interest, and consider the results of the inoculation experiments in Damán to be distinctly encouraging.

2. I am to request that you will address the Government of Bombay with regard to your suggestion that a system should be organized for carrying out preventive inoculation against plague on an extensive scale. That Government, to which a copy of your letter of 20th November has been sent, will no doubt afford you all practicable assistance in making a further trial of your system in the localities at present infected with plague.

From the GOVERNMENT OF INDIA to the SECRETARY OF STATE FOR INDIA.

(Sanitary. No. 4.)

MY LORD, Calcutta, the 3rd February 1898.

IN continuation of our Sanitary Despatch No. 1, dated the 6th January 1898, we have the honour to forward, for Your Lordship's information, statistics showing the progress of the plague during that month, and the following further narrative of matters connected with the plague.

2. We regret to state that in the City of Bombay the disease has made alarming progress. The number of seizures and deaths reported during the month were 2,910 and 2,934, respectively, and the mortality from all causes was 6,801. The corresponding figures for the month of December 1897 were 805, 644, and 3,736. The figures during each week of the month were as follows :—

—	Seizures.	Deaths.	Total mortality.
1st to 7th	375	357	1,118
8th to 14th...	551	557	1,423
15th to 21st	765	761	1,706
22nd to 28th	831	840	1,726
29th to 31st	388	419	828

On the other hand, the Bombay Government estimate the present population of the city at 800,000 persons as compared with about 450,000 at the same time last year. The disease appears to be of a very malignant type giving little time for the discovery of cases before death. We have been in communication with the Bombay Government as to the gravity of the present situation and have been assured by them that the system of death report is more accurate than the system which obtained last year. The best available officers are engaged on plague work in the city, the Plague Committee has been strengthened, the superior skilled staff is nearly double of that employed last year, and in addition, the opium detective staff are employed in finding out cases. For purposes of organization the city has been divided into wards which are subdivided into districts and sub-divisions of districts, and these again into smaller areas. The Government of Bombay also state that the evacuation of houses is proceeding and that persons who have been in contact with the sick are carefully segregated. About 7½ per cent. of the persons are found to be infected.

3. In the Districts and Native States of the Bombay Presidency there continues to be a marked general improvement. The following statement shows the localities in the

Bombay Presidency proper where plague is now most prevalent, and compares the number of reported seizures during the months of January 1898 and December 1897 :—

	January 1898.	December 1897.
Satara District	1,139	2,125
Surat District	685	646
Baroda State	570	78
Sholapur District	504	1,475
Poona City	462	1,648
Nasik District	424	371
Belgaum District	399	342
Cutch State	254	151
Palanpur State	236	273
Poona District	215	474
Ahmednagar District	209	273
Kolhapur State	196	77
Thana District	120	68
Kolaba District	83	36
Khandesh District	60	63

The rapid decline in the number of cases in Poona City and District and in Satara and Sholapur Districts is very satisfactory.

The increase in the number of cases in the Baroda State is the worst feature. This increase is mainly due to the epidemic in Baroda City, which continues to gain ground in spite of all efforts to suppress it. A copy of correspondence with the Agent to the Governor General on the subject of the measures adopted in Baroda City is appended to this Despatch.* Your Lordship will observe that the Baroda Durbar have displayed great energy in endeavouring to meet the crisis. A careful organization has been established for the detection of cases of the disease, and the adoption of the prescribed precautions on the discovery of such cases, hospital and segregation accommodation has been provided, the sick are isolated, and infected houses and localities are evacuated, disinfected, and cleansed. Mr. Wingate, the Plague Commissioner for the Bombay Presidency, is assisting the local officers with his advice, and in view of the continued increase of the disease, we have suggested that an experienced Commissioned Medical Officer from the Bombay Presidency should be deputed to Baroda to supervise the arrangements. Instructions have also been given that M. Haffkine should be sent to Baroda to make arrangements for the inoculation of such of the inhabitants as desire to avail themselves of his protective system.

4. The only cases reported from Sind are nine cases at Kotri.

5. We have kept Your Lordship informed by weekly telegrams of the occurrence of cases of plague outside the Bombay Presidency and Sind. Plague exists at present in the Naldrug District of the Hyderabad State; in the Sirohi State, in Rajputana; in a small area in the Hoshiarpur and Jullunder Districts in the Punjab; and near Hardwar in the Saharanpur District, in the North-Western Provinces.

6. The Naldrug District of the Hyderabad State is situated along the borders of the Sholapur and Ahmednagar Districts of the Bombay Presidency. The existence of plague in Sholapur and Ahmednagar involved Naldrug in great danger. The spread of the infection to this tract was not discovered and reported till some time after indigenous cases had begun to occur. It appears from the communications from the Resident at Hyderabad, which are appended to this Despatch,* that the villages of Itkal, Kashgaon, Dhotri, Warligaon, Sarali, Raviamba Ajagu, and Gungoti are or have been infected. All these villages are situated near the Sholapur border. We have telegraphed instructions to the Resident at Hyderabad regarding the measures that should be taken to obtain immediate information of the occurrence of cases in and near the infected area, and the precautions that should be adopted, and have requested him to arrange for the evacuation of the infected villages and the segregation in camp of the inhabitants after disinfection of their clothing and bedding. We have asked him to have Dr. Lawrie, the Residency Surgeon, placed in charge of the operations and have also suggested that a Medical Officer with experience of plague from the Bombay Presidency should be deputed to the scene of the outbreak in order to advise regarding them. The Government of Madras have represented

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* Not reprinted.

that it is desirable to stop the pilgrimage to Mecca in the case of residents in the Hyderabad State in view of the outbreak of plague in the Naldrug District. The Resident is taking measures to stop persons from the Naldrug District from going on pilgrimage, and we consider that this precaution will suffice, and that it is not necessary to altogether prohibit the pilgrimage from Hyderabad in consequence of the local outbreak on the border of the State.

7. In the Sirohi State in Rajputana the villages of Kalinderi, Shudial and Tewri, all situated near the border of the Palanpur State, are infected, but the number of cases does not show any tendency to increase, and the watch that is being kept on the neighbourhood has not disclosed any spread of infection. The inhabitants of infected houses and streets have been segregated, and the whole of Kalinderi village, with a population of some four thousand persons, was evacuated by the 16th instant.

8. The evacuation of the infected villages and the segregation of the inhabitants in camp appear to have been successful in overcoming the outbreak of plague in the Jullunder and Hoshiarpur Districts. Fifteen cases have been reported during the second-half of January from the villages of Khankhanan and Birampur, and none from Khatker Khurd and Jhander Khurd. There has been no further spread of infection. In reply to an inquiry we made as to the adequacy of the organization for detecting cases of plague in the infected neighbourhood, the Government of the Punjab stated that the Commissioner of the Jullunder Division believed that the measures were so effectual that plague could not exist undiscovered for more than forty-eight hours. A report on the measures taken at Khankhanan is appended to this Despatch,* and also a copy of a very useful set of general instructions issued by the Government of the Punjab on the action to be taken on the occurrence of plague in a town or village.*

A large fair was held at Thanesar near Umballa on and about the 22nd January in connection with the solar eclipse. At the request of the Government of the Punjab we issued orders, under the Epidemic Diseases Act, on the 13th instant, prohibiting the sale in the Bombay Presidency of tickets to travel by railway to the stations near Thanesar, until the end of the month, to any pilgrim or other person intending, or believed to be intending, to go on pilgrimage to the Thanesar Fair.

9. No new cases of plague have occurred at Hardwar and Kankhal, but a few cases have been reported from the neighbouring town of Jawalapur and from the village of Jaggitpur, a few miles from Kankhal. Most of the cases occurred during the first-half of the month. To meet the danger exhibited by the tendency of the disease to spread the Government of the North-Western Provinces and Oudh has issued orders, of which a copy is appended,* for the employment of a special organization for ascertaining whether the infection extends to places other than those in which it has been detected. This organization is based upon that which was so successfully utilized in distributing relief during the recent famine, and the essence of it is that a sufficient number of European officers are employed to render the powers of search effective, and at the same time to prevent the subordinate establishment from abusing their authority.

10. The Bombay Plague Commission under Mr. Wingate having visited all the infected areas in the Bombay Presidency, and examined the arrangements in force at each place, have devised a set of rules for plague administration which have been published by the Government of Bombay in the form of instructions for the guidance of district and other officers. The rules contain a most useful description of the measures that must be taken to combat an outbreak of plague. We have caused the rules to be circulated for the guidance of other Local Governments and Administrations, stating that they are based upon principles which, subject to certain remarks on the principles to be followed by Medical Officers in detaining travellers, we approve. We have taken this opportunity to explain to Local Governments and Administrations our views on the most important features of plague administration, which we have embodied in the Resolution of which a copy is appended to this Despatch. Special attention is paid in the Resolution to the segregation of the sick and of the healthy inmates of infected houses, the evacuation of infected localities, and land quarantine. We have already from time to time explained our views on these matters to Your Lordship. Corpse inspection is mentioned in paragraph 4 of the Resolution. We will address Your Lordship separately on this subject with reference to your Revenue Despatch No. 195, dated the 4th November 1897,

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* Not reprinted.

as soon as we have received the replies which are still due from the Local Governments and Administrations whose opinions we have invited.

11. In conclusion, we forward, for Your Lordship's information, copies of Notifications issued by Local Governments and Administrations under the Epidemic Diseases Act, and copies of the more important Resolutions recently issued by the Government of Bombay on matters connected with the plague.*

We have, &c.,
ELGIN,
&c., &c.

INSTRUCTIONS REGARDING PLAGUE ADMINISTRATION FOR THE GENERAL GUIDANCE OF DISTRICT AND OTHER OFFICERS.

1. Plague is a disease which is essentially associated with insanitary conditions in human habitations, the chief of which are accumulations of filth, overcrowding and the absence of light and ventilation.

2. It is, in the first instance at least, a disease of locality, and is mainly conveyed from place to place by individuals in their person, clothing and personal effects, who have resided in the infected locality.

3. The essential measures to be taken for preventing the spread of the disease are its early recognition in a locality, the removal of the inmates from the infected locality or area, which, in the first instance, may be only a room or house, their segregation for a specific period, the disinfection of their persons, clothing and personal effects, and of the houses with their contents, situated within the infected locality.

4. The first steps to be taken are in connection with the sickness and mortality. There are, at present, no methods in actual operation by which these can be accurately ascertained. Infectious diseases are not notified, and the registration of deaths is imperfect. Means must be adopted to improve the latter, and check the results by recording in towns all funerals which pass the octroi posts, noting the name of the deceased and the locality of the house in which the death occurred, and by posting trustworthy subordinates, either members of the Police force or of the Revenue Department, at all burying and burning grounds, noting similar information. These subordinates, not being connected with the Municipality, will afford valuable aid in checking the returns, and they will assist the Municipal authorities in arriving at correct results.

5. In villages, the Pátils must submit weekly returns of deaths in each village, within their respective jurisdiction, to the Mámlatdár, who will forward them to the Collector of the district, after noting on each any peculiarity in the incidence of the deaths, the mortality for the corresponding week during the past three years, and explaining, if he can, any excess. When the Mámlatdár is not satisfied as to the cause of any excessive or unusual mortality, he should cause special enquiries to be made, and, if necessary, call in the assistance of the nearest medical subordinate.

6. The Pátils should also be required to give notice at the police station of the arrival in their villages of any persons from an infected locality. The names of such persons should be entered in a register at the police station, and they should be kept outside the village under observation for ten days and on no account allowed to sleep within the village site. The cause of the death of any person who has recently been in an infected locality should be investigated. In villages remote from a police station the Police Pátil should discharge these duties, but the Revenue Pátil and the Kulkarni should be held equally responsible.

7. The returns referred to in paragraphs 4 and 5 will show, both in towns and villages, any unusual mortality over the average of previous years, and also the occurrence of two or more deaths in one house or localised area when immediate special enquiry is necessary.

8. For the discovery of cases of sickness it will be necessary to obtain the assistance of the more respectable residents in each quarter, street or group of houses. In any doubtful case of sickness they could obtain the services of the medical subordinate attached to the dispensary, or a hospital assistant may be specially deputed to aid the residents in the work of detection.

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* Not reprinted.

9. It should be made obligatory under the Epidemic Diseases Act for the occupier of each room or house in an infected town to notify all cases of sickness and death, occurring in the room or house occupied by him, and for every medical practitioner practising in such a town to report all cases of sickness and death coming to his knowledge in the practice of his profession.

10. When there is reason to believe that cases of plague are occurring in a town or are likely to occur, owing to its proximity to an infected area, the town should be divided into quarters or divisions of a size convenient for effective supervision, and each quarter should be placed, as far as possible, under the charge of an European official, who may be a civil officer, taken from any department, a military or a medical officer, according to circumstances.

11. The quarter under each officer should be subdivided into defined areas, which might consist of a street, a portion of one, or a group of houses, and each of these sub-divisions should be placed under the charge of a district or local subordinate, who may, for convenience, be called a supervisor. With each supervisor will be associated one or more residents of the sub-division, who will assist the supervisor in obtaining information regarding sickness and mortality in the areas respectively allotted to him. Under each supervisor will be a gang of coolies, varying in number to suit the requirements of each locality. The gangs working in the more populous towns should be divided into three sections, each with defined duties as follows :—

(*a*) for the detection of cases and their removal to hospital ;
(*b*) for the evacuation of houses and for the removal of the inmates to camp ; and
(*c*) for the disinfection of houses.

12. So long as plague exists in the Presidency, it is advisable that the above organisation should be prepared for each town and district area, Native Superintendents being substituted for Europeans in the latter, and the members should be ready to act when the necessity arises. At each town exposed to danger an observation camp should be provided where all suspicious arrivals from infected areas may be detained for ten days.

13. It is believed that under such a scheme information regarding all cases of sickness will be easily and readily obtained, but should the people be unwilling to assist the authorities, or withhold the necessary information, then it will be advisable to organise search parties under the charge of the Divisional Superintendent. Each search party should be accompanied by a Medical Officer or subordinate, and by a female, either European or Native.

14. It is absolutely essential to success that all the measures mentioned above for the suppression of the disease should be carried out promptly and effectively. To ensure this being done all the members of the staff engaged in the work should have a clear idea of their duties : the operations will then be conducted in a methodical and systematic manner.

15. The Superintendent should be provided with a suitable office situated in his own division, where he should remain the whole day, except at intervals for meals. The office will be his head-quarters to which all communications should be sent, and at which the Supervisors will make their daily reports. He will exercise a general supervision over all the operations and will issue orders for the necessary action to be taken by each section of the gang of coolies.

16. No house vacated on account of plague may be reoccupied without his sanction, and he may cause a notice to that effect, to be affixed to each vacated house. He should place a seal on boxes containing valuable property left in houses which have been evacuated on account of plague. Such property may be removed by the owner, but if he declines to do so, it will remain at his risk.

17. Property of any value belonging to the poorer classes which it may be considered necessary or advisable to destroy as being infected should be appraised by two or more respectable natives and the value paid to the owner by the Superintendent of the division. Compensation should also be given without delay to the very poor for the destruction of clothes, &c., which although they may be of no market value yet serve a useful purpose to the owners.

18. After a house has been disinfected, the door will be secured by a padlock, of which the Superintendent will retain the key or entrance may be barred by any other effectual method.

19. The stock of disinfectants, padlocks and all surplus appliances for divisional use will be kept in or near the office.

20. Each Supervisor will keep a list of all residents in each house in his subdivision. He will inspect all new arrivals, and will obtain information from them as to their previous place of residence. He will, in company with the local resident appointed to assist him, visit all the houses in his sub-division, and obtain information regarding the health of the different inmates, and will, on the conclusion of his rounds, report verbally to his Superintendent the occurrence of all cases of sickness and death and any information regarding arrivals from infected localities. Any case of plague, and all doubtful ones of sickness should be at once reported to the Superintendent at his office by day, and at his house by night.

21. The Supervisor will be provided with a sufficient supply of disinfectants ready for use, with tubs, buckets, watering pots, one or two hand-pumps, either jet or spray, and implements required for unroofing houses and making holes in the walls. There should also be a dooly, charpoy or bamboo frame for the removal of the sick. It should be thoroughly washed or sprayed with perchloride of mercury solution, either at the hospital or sub-divisional depôt after use. This is necessary, as the same dooly may be used for carrying suspected cases to the observation ward. All the above articles should be kept in a room or yard near the centre of his sub-division or at the Superintendent's office.

22. On a report being received by a Superintendent of the occurrence of a case of plague, he should at once proceed to the house, and when he has satisfied himself that the case is one of plague or of a suspicious nature, he will at once give orders for the removal of the patient, either to the Plague Hospital or to the observation ward, according to the opinion he has formed of the case. The other inmates of the house, with their movable property, should be taken to the segregation camp, in charge of one or more policemen or other responsible persons.

23. They will be supplied with passes by the Superintendent admitting them into hospital and camp. These passes after countersignature by the medical officer or the officer at the camp will be returned through the policemen to the Superintendent.

24. After evacuation of the house, the walls and floors of all rooms, with their contents, except articles of food which it is not intended to destroy, and of all enclosures, should be thoroughly drenched with a solution of perchloride of mercury, and in the course of two or three days coated with freshly prepared limewash. All rags and refuse found in the house or enclosure should be burned in the presence of the Supervisor.

25. The roof, if not a pucka one, should be removed, and holes should be made in the walls to admit freely air and light to the smaller rooms and enclosures. On the completion of these operations, the door should be secured with a padlock.

26. The coolies engaged in the work of disinfection, &c., should be provided with boots or shoes, to protect their feet from the danger of infection through abraded surfaces.

27. It may be necessary, owing to the occurrence of several cases in the one area, to vacate a group of houses or a whole sub-division. Should any necessity exist for the adoption of such a measure, it should be carried out as soon as possible by placing a cordon of police or troops around the area and removing the whole population to the segregation camp. Disinfection and unroofing of the houses to be carried out in due course.

28. Experience has abundantly proved that the evacuation of an infected house or houses is seldom in itself sufficient to stamp out the disease. When plague manifests itself in one house, in an indigenous form, those in the neighbourhood have, as a rule, already become infected, and it usually follows that cases subsequently appear in them. It is therefore always a wise and prudent course on the occurrence of an indigenous case, not only to evacuate the one house but also all those in the immediate neighbourhood.

29. On the evacuation of the houses in the infected area, all the other inhabitants should be encouraged to leave the town and any obstacles which may tend to delay their departure should if possible be removed. The time for prescribing the issue of passes should be carefully considered by the Collector, as if the rules prohibiting departure without passes are applied prematurely the exodus of the inhabitants generally will be retarded, more particularly of the poorer classes, who feel diffident about applying for passes or are too apathetic to do so.

30. In a large town where the disease has become of general prevalence, every quarter being affected, and the arrangements for dealing with the epidemic are incomplete and defective, measures must be taken to regulate the departure of the population and prevent them carrying infection to healthy areas. Every effort should in the meantime be made to provide sufficient accommodation in huts for a large proportion of the population.

31. In the case of villages badly infected the whole of the inhabitants should be turned out. Villagers are accustomed to erecting shelters for themselves, but, if necessary, materials for hutting should be supplied. The sick and suspected villagers should be carefully separated from the healthy and an officer should be appointed to examine the daily health of the population and prevent migration to other villages.

32. Daily inspection of villages situated in the neighbourhood of an infected locality should be instituted and maintained during the outbreak, and continued for 10 days after the occurrence of the last case, with special reference to the exclusion of refugees who should be required to camp out.

33. A site for the hospital should be selected as near as possible to the infected population, but a permanent building, suitable in all respects for a hospital, may sometimes be obtained either inside or on the outskirts of the town. It can be easily disinfected when it is no longer required for a hospital, and such a building would be more popular and convenient than huts erected at a distance from the town.

34. If a suitable building is not available it will be necessary to erect huts for plague patients, for convalescents and for the observation of doubtful cases, on the nearest site. The hospital huts intended for females should be some distance apart from those intended for males. The size of each hut will depend on the number of patients expected, but it is advisable not to place a large number of patients in one hut. A series of huts, each capable of accommodating 6 to 12 patients, will be the best arrangement, and it is one which will admit of the higher and lower castes securing separate accommodation. Moveable mat screens should be provided between the beds to secure as much privacy as is possible to each patient. Every patient should be supplied with a cheap substitute for a spittoon, and both it and the vessels used as bed pans, should contain a sufficient quantity of an effective disinfecting solution. The floor of the hospital huts should be freely watered daily with the perchloride of mercury solution, and vessels containing the same solution should always be available for the disinfection of the hands and feet of the native attendants.

35. One relative or friend may be permitted to attend a patient, and a stated time should be set apart for the visits of relatives and friends of the patients.

36. On the arrival of the patient at the hospital, all his clothing should be removed and burnt in the presence of the medical subordinate. Hospital clothing should then be supplied. On recovery the patient may be transferred to the convalescent ward or dismissed. In either case he should be given a warm bath and supplied with new clothes. The hospital clothing, on the discharge or death of the patient, should be disinfected, washed and exposed to the sun for a few hours, after which it may be again taken into use.

37. The hospital and observation wards should be surrounded with a bamboo or other fence.

38. Huts for the segregation of individuals removed from infected houses, and of all suspected persons, should, if possible, be erected at a convenient distance from the hospital compound, and should be surrounded by a bamboo or other fence. Individuals brought for admission into this camp should, for purposes of cleanliness, be bathed in a solution of carbolic acid, one to a hundred parts of water, and their clothing soaked in a solution of one to twenty; if there are no children, perchloride of mercury solution may be used for the latter purpose.

39. All the inmates should be inspected daily, either by the medical officer or a medical subordinate, and any case of plague detected should be removed at once to hospital, and doubtful cases of fever to the observation ward. If no case occurs amongst them, after an interval of 15 to 30 days, they may be allowed to return to their houses, if such houses have been cleaned and disinfected and if the local authority considers that they are fit for re-occupation, or be admitted into the camp for healthy individuals, after a second disinfection of their clothing.

40. Both the hospital compound and the segregation camp should be guarded by troops or police, to prevent the egress of inmates.

41. The establishment of separate hospitals and segregation camps for the reception of members of special castes and religions should be encouraged and every assistance should be given by the local authority for their erection and supervision. The treatment of the patients admitted into these hospitals may, if desired, be placed in the hands of Vaids and Hakims and the internal management of both hospitals and camps may be conducted by members of the caste or religion concerned, subject however to the general supervision of a European doctor where possible and control of the local authorities and to the usual arrangements as regards guards.

42. A camp for the healthy, *i.e.*, for people removed from houses not infected, should also be arranged for. All individuals admitted into it should also be bathed and their clothes disinfected as with admissions into the segregation camp. They should be allowed to pursue their daily employments, on condition that they sleep in camp. The huts should be numbered, inmates registered and a daily inspection made of all the residents. If no case of plague has occurred in a hut for 15 to 30 days, the inmates may, after a second disinfection of clothing, be allowed to return to their houses if such houses have been cleaned and disinfected and if the local authority considers that they are fit for re-occupation.

43. Should a case of plague occur in a hut, the patient should be removed to hospital, and the other inmates to the segregation camp. The hut should be removed, the site disinfected with the perchloride of mercury solution, and the materials of the hut should be similarly disinfected and exposed to the sun for a couple of days, when they can be utilised in the erection of another hut on a new site.

44. The best arrangements should be made for a plentiful supply of water to the different camps. If the water-supply to the town is conveyed through pipes, connections should be carried into the camps. Bathing platforms at some distance apart for the two sexes should be constructed, and provided with surface drains for the removal of surplus water.

45. Separate latrines for the sexes should be erected in connection with the two camps and hospital, and they should be well lighted with ordinary post lamps.

46. Bunniahs' shops with all supplies should be provided for each of the camps.

47. Cases of plague imported into towns and villages, if they are not at once discovered and isolated, will, under existing conditions, develop new centres of the disease and thus infect fresh localities. It is a difficult matter to detect such cases in transit from an infected area.

48. Medical inspection of travellers by rail and road is useful in discovering those actually suffering from the disease or affected with the preliminary symptoms of fever, but as the period of incubation may extend to eight or nine days, it is evident that inspection is of no avail in detecting infected travellers who are in the stage of incubation. Such travellers cannot be discriminated from the non-infected, and it is necessary for their detection that they should be kept under observation for a period not exceeding ten days.

49. Passengers or travellers who can produce satisfactory evidence that they have not been exposed to infection, may be exempted from detention, as it frequently happens that only one or a few places may be infected in the particular district. The local authorities should give certificates to all persons wishing to travel from the non-infected areas in the district, stating that the holders (giving names, &c.) have not been exposed to infection.

50. The period of observation may, in the case of travellers of ascertained respectability, be converted into one of surveillance at places of destination, if they give satisfactory assurance (or furnish security) that they will report themselves daily to an authorised medical officer. Lists of such passengers should be forwarded either by wire or post to the local authority at place of destination, and any one failing to report may be prosecuted. The medical officer is not at liberty to exempt the individual from attendance without the concurrence of the local authority.

51. The inspecting officer may, however, exercise his discretion as to the necessity of detaining any particular individual.

52. In addition to medical inspection at selected stations a medical officer or subordinate should, if available, be appointed to travel by each train from or passing through an infected district for the purpose of examining passengers booking and alighting at all stations along the line.

53. The object in exercising control over the movements of travellers from an infected area is for the general welfare of the public and not to harass the individuals. It is hoped that by detaining passengers from an infected area, the healthy or non-infected will be eliminated after a few days, and allowed to proceed on their journey. If the preparatory measures as previously detailed for the suppression of the disease are carried out in an efficient manner, there is every reason to believe that restrictions on travelling will be unnecessary.

54. Any arrangement calculated to prevent the exodus of the healthy from an infected locality or area, must tend to produce a more virulent form of the disease, and its more rapid diffusion among the community.

55. Camps will be established, under the orders of Government, at selected stations suitable for detention of passengers and for the disinfection of clothing and baggage.

56. The above rules will also apply to travellers by road.

57. For preparation of the perchloride of mercury solution for disinfection, see Appendix.

APPENDIX.

The most convenient and satisfactory way of preparing the solution of perchloride of mercury, on a large scale, is that which has been recommended by Dr. Maynard, now on plague duty in Nasik.

The ingredients should be mixed in a 50-gallon cask in the following quantities:—to 77 lbs. of perchloride of mercury and 38½ lbs. of pure salt add 15 gallons of boiling water, stir well with a wooden stict, and then fill up the cask with cold water. The solution contains one part of perchloride to 6½ of water, and one ordinary quart bottle of it, added to 25 gallons of water—the capacity of the ordinary wooden tubs in use—will give a strength of 1 in 1,000.

The standard solution can be carried about in quart bottles placed in partitioned boxes, and is always ready for use without further weighing or measuring.

If the solution is prepared with cold water, the perchloride of mercury must be powdered and two parts of pure salt to one part of perchloride added. The whole should be well stirred until the solids are completely dissolved.

It is of advantage, for several reasons, to add one half per cent. of crude Hydrochloric acid to the solution.

Iron hoops of all casks, tubs, and buckets should be dammered. If iron receptacles are used they should be dammered inside and outside.

If metal pumps are employed for distributing the solution, they should, previous to use, be worked in vegetable oil, and after use thoroughly cleaned in water. This will tend to lessen the corrosive action of the mercury.

No. 227—240.

Extract from the proceedings of the Government of India in the Home Department, Sanitary,—dated Calcutta, the 3rd February 1898.

RESOLUTION.

The Epidemic Diseases Act (III of 1897) empowers the Governor-General in Council when satisfied that India or any part thereof is visited by, or threatened with, an outbreak of any dangerous epidemic disease, to take special measures over and above those permissible under the ordinary law, with the object of preventing the outbreak of such disease and the spread of it, and further authorizes the Governor-General in Council by general or special order to direct that the powers conferred by the Act may also be exercised by any Local Government with respect to the territories administered by it. By the Home Department Notification No. 302, dated 4th February 1897, the Governor-General in Council directed that the appropriate powers conferred by the Act might be exercised within their respective territories by the different Local Governments and Administrations in British India, and by notifications issued in the Foreign Department the Agents to the Governor-General were also empowered to issue regulations under the Act both in respect of parts of British India under their charge and in respect of territories in India under the administration of the Governor-General in Council which are not parts of British India. The Government of India have themselves from time to time issued regulations under the Act in respect of matters in which Imperial interests were involved or action had to be taken by Departments under their direct control, but their object in delegating the powers conferred by the Act to Local Governments was to avoid hampering them in action taken by them to prevent the outbreak or spread of the plague, and to admit of the regulations under the Act being adapted, so far as this is possible without preventing them from being effective, to local conditions and so as to respect local prejudices. Copies of all the regulations issued by Local Governments and Administrations have been communicated as they were issued by the different Local Governments and Administrations to the Governor-General in Council for information, and under the orders of His Excellency in Council these have been examined on their receipt, and in any case in which they have been found to be in conflict with the general principles which have guided the Government in dealing with the plague the Local Government or Administration concerned has been requested to cancel or modify them. Experience in the working of the rules has been mainly obtained in the Bombay Presidency to which, with very few exceptions, plague has been hitherto confined, and, in view of the fact that the Plague Commission under Mr. Wingate accompanied by Dr. Cleghorn, Director-General of the Indian Medical Service, have recently visited all the infected areas in the Bombay Presidency and, after examining the arrangements in force in each place, devised a set of rules of which the Government of India, subject to the remarks made in paragraph 11 of this Resolution as to the principles to be followed by medical officers in detaining passengers, approve, the Governor-General in Council proposes to take the opportunity of communicating these rules to the different Local Governments and Administrations with the suggestion that they should be utilized as a model upon which to frame rules for other Provinces.

2. The Government of India desire to express their concurrence in the statement contained in rule 3 of the rules as to the measures which must be taken to combat an outbreak of the plague. The essential measures to be taken are (1) the early recognition of the disease in a locality, (2) the treatment of the sick in places of segregation, (3) the removal of the other inhabitants from the infected house, locality or area, (4) their segregation for a specific period, (5) the disinfection of their persons, clothing and personal effects, (6) the disinfection of the houses in the infected locality and their contents, (7) the improvement of the ventilation of the houses, the abatement of overcrowding, and the prosecution of general measures of sanitary reform.

3. One of the main difficulties which have to be contended with in dealing with the plague is the absence of any efficient organization for the detection of cases before the outbreak has attained proportions which make it impossible to suppress it for a considerable time. Considering the extent to which fever prevails in the country and the ignorance of the agency responsible for reporting the occurrence and cause of deaths, it can hardly be expected that every case of plague will be brought to notice immediately after it has

occurred, and it is very desirable that where there is any reason to suspect the existence of the disease, a regular system for the detection of suspicious cases of sickness should be devised. Rules 4 and 9 of the Bombay Rules contain directions designed to secure the detection of the disease by improving the arrangements for reporting sickness and mortality, and the arrangements for rural areas described in rules 5 and 6 have for some time past been in force in the North-Western Provinces, the Punjab, the Central Provinces and Bengal. The occurrence of cases of plague in villages in the neighbourhood of Kankhal in the Saharanpur District of the North-Western Provinces has also led the Lieutenant-Governor and Chief Commissioner to issue orders for the employment of a special organization for ascertaining whether it has extended to places other than those in which it has been detected. This organization is based upon that which was so successfully utilized in distributing relief during the recent famine, and the essence of it is that a sufficient number of European officers should be employed to render the powers of search effective and at the same time prevent the subordinate establishments from abusing their authority. A copy of the orders issued by the Government of the North-Western Provinces and Oudh to the Commissioner of the Meerut Division is appended to this Resolution,* and the Governor-General in Council desires to commend them to the consideration of other Local Governments and Administrations in case there should at any time be reason to suspect that plague exists and has not been detected. For the purpose of supervising work of this nature young officers of the Staff Corps will, the Government of India believe, be found to be a most suitable agency should the Civil Establishments be insufficient, and though it may not be possible to procure the services of such officers in any numbers at the present juncture, the Government of India will endeavour, should the necessity arise, to procure them from the Military authorities when the operations at present being carried out on the North-Western frontier have terminated.

4. Another measure which has been put forward as an effective means for ascertaining the existence of plague is the inspection of corpses. The Government of India have consulted Local Governments and Administrations as to the question whether corpse inspection is a reliable means of bringing facts to light and whether the feeling of the people is opposed to it or not. The Governor-General in Council has not yet received all the replies to the reference made upon this question and it will be dealt with separately later on. On the information at present before them it appears to the Government of India to be doubtful whether the measure is likely to be of great assistance, and they fear that its general introduction would be repugnant to the feelings of the people.

5. The system prescribed in Rule 10 and the following rules issued by the Bombay Government for the division of towns which are infected or liable to infection into quarters or divisions of a size convenient for effective supervision meets with the approval of the Government of India, and in this, as indeed in all the measures taken for the suppression of the plague, it is essential to secure the supervision of an European official who will carry the people with him, and see that their customs and susceptibilities are as far as possible respected. When search parties are organized to ensure that all cases of the disease are brought to notice, and this measure will, it appears to the Government of India, be found to be a very necessary one at any place where an outbreak occurs, endeavour should be made to associate respectable native gentlemen with them, and female medical attendants should accompany them for the purpose of examining females.

6. When plague actually breaks out the segregation of the sick and of the persons who have been in immediate contact with them is a fundamental precaution which is essential to the successful issue of any operations against it. In devising means to secure this object it is necessary on the one hand to consider the urgent necessity of preventing sufferers from plague from spreading the infection among their neighbours, and on the other hand the great importance of interfering as little as possible with the customs and the feelings of the community. The Governor-General in Council considers that experience has shown that in order that segregation may be efficacious it must be carried out in hospitals or other suitable places specially appointed for the purpose. A measure of this nature can hardly be expected not to cause alarm among the people many of whom regard the privacy of their houses as sacred, and this feeling can only be allayed if those affected by it have confidence in the motives of Government, and believe that it is actuated solely by a desire to stay the pestilence. The Governor-General in Council has been much impressed by the readiness and docility with which the people in many of the infected areas have discarded their prejudices and submitted to removal from their houses, and His Excellency in Council feels confident that, if the necessity for the measure is carefully

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* Not reprinted.

explained to them, the co-operation of leading men obtained as far as possible, and every consideration shown to the feelings and habits of those to whom the regulations have to be applied, this measure will be accepted without objection by the people of a locality in which plague has made its appearance. But it appears to His Excellency in Council that the prospect of such action being required of them in the event of plague appearing in their midst may not unreasonably seem distasteful to them so long as there is no immediate danger of an outbreak, and it is therefore desirable to, as far as possible, remove any cause for discontent by encouraging the people themselves to make arrangements for the establishment of private hospitals and segregation camps for particular castes, classes, joint families, and associations of families in anticipation of the necessity for their removal from their own houses arising. The equipment and administration of such hospitals must be approved by duly appointed authority. They should be conveniently placed, and it is not necessary that they should be located in remote situations. They should not, however, be situated in houses which are actually inhabited or blocks of houses or streets, for in the event of an outbreak of plague, cases of the disease might occur in the house or block which it would then be necessary to completely evactuate. While His Excellency in Council is strongly of opinion that in carrying out any measures of segregation regard should be had, as in the case of Europeans, to the position in society of those classes of the native community who can be relied on to take efficient measures with the object of preventing the spread of infection, and to other considerations of a like nature, it is not, he fears, possible save in the most exceptional cases (as for instance that of a house located in a large garden, in which a hospital or private camp can be located at a distance from the house actually infected) to permit the residents of an infected house not to evactuate the area in which it stands. His Excellency in Council therefore anticipates that in a crowded city there will be few (if any) houses which it will be safe to license as hospitals or for segregation purposes. In public as well as in private plague hospitals all possible consideration should be shown to the feelings of the inmates, and in especial caste distinctions and the privacy of females who do not appear in public should be carefully respected. His Excellency in Council also considers that it is neither necessary nor humane to separate the sufferers from their families and friends, and all plague hospitals, whether Government hospitals or private caste hospitals, should therefore be arranged so as to provide separate accommodation for the immediate family or friends of the patients. For the public hospitals it will be found convenient to utilize schools and other public buildings which are available and suitable.

7. Before leaving the subject of segregation the Governor-General in Council desires to say that, while it has not yet been shown that inoculation with prophylactic *serum* such as has been prepared by M. Haffkine, C.I.E., can be relied on as a means to prevent the spread of plague, the results of the experiments made are so distinctly encouraging that he is not without hope that it may be demonstrated that protection may be ensured by means of prophylactic inoculation. It is desirable that every opportunity should be taken to test the efficacy of inoculation, and the Governor-General in Council will feel obliged if Local Governments and Administrations, within whose territories plague now exists or may appear in the future, will place themselves in communication with M. Haffkine in order to procure a supply of *serum* for the use of persons who desire to have themselves inoculated. No person should be inoculated except with his express consent. In the event of the efficacy of inoculation being eventually established, it will, it appears to the Government of India, become possible to dispense with segregation in the case of persons who have undergone the process of inoculation. Even in this case it will, however, still be necessary to require the evacuation of infected houses and localities with a view to their thorough disinfection for the purpose of destroying the germs of infection.

8. The rules issued by the Bombay Government for the removal and burning of the clothing of a patient suffering from plague, for the disinfection of all those removed from the infected area whether to the camp for suspected persons or to that for the healthy, and for preventing the re-occupation of houses in the infected area until a certain time after they have been evacuated, cleaned and disinfected, appear to the Government of India to be full and satisfactory. The Governor-General in Council desires to impress upon Local Governments and Administrations the paramount importance of making efficient arrangements to prevent people from returning to occupy evacuated houses before the time specified, and of securing that all articles likely to convey infection are without exception removed from infected houses and immediately destroyed or disinfected.

9. It seems to the Government of India desirable to express their views upon the subject of quarantine in relation to the suppression of plague. Her Majesty's Government

and the Government of India have continuously been opposed to the view that the spread of epidemic disease can be effectively checked by the imposition of quarantine so as to prevent the movement of the people to other places from areas in which epidemic disease prevails. The first reason which has led the Government of India to this conclusion is that it is impossible to make any system of land quarantine in India effective. It could, indeed, be arranged that every traveller by railway should on leaving the infected area be placed in a segregation camp for a given time, but any attempt to block all the roads and paths from the infected area must be defeated, firstly, because the Government has not at its disposal the necessary establishments to make such a stoppage of the traffic effective, and secondly, because the establishments could not be relied on to carry out the duty. But even could it be made effective, a system of land quarantine would, in the opinion of the Government of India, be mischievous in itself and calculated to foster rather than to suppress an outbreak of epidemic disease. It is in appearance so easy a remedy that if adopted it would be apt to distract attention from those surer and most essential measures which, if plague is to be suppressed, must be taken at the place where the outbreak occurs. It causes hardship and suffering to the people who have to be detained, and it affords opportunities of every kind for bribery, blackmail and extortion to the subordinate establishments employed to enforce it. The collection in camp of large bodies of people who have previously been subject to the risk of plague infection involves danger of an outbreak of the disease in the camp, and may thus establish fresh *foci* for the dissemination of the disease. The views held by the British Government and the Government of India on the subject of quarantine were for a long time resisted on the Continent of Europe, but they have now been accepted by the European powers, and in the Dresden Conference of 1893, to which the Government of India declined to become a party for other reasons, the uselessness of land quarantine was for the first time recognized by them in respect of cholera. Prior to the assembly at Venice in the spring of 1897 of the delegates deputed to concert measures to prevent the introduction and spread of the plague in Europe, the Governor-General in Council had considered and rejected a proposal to place in quarantine the whole of the Bombay Presidency owing to the outbreak of plague within it, against the rest of India. In paragraph 3 (iii) of the Home Department letter No. 1623—26, dated June 1st, 1897, addressed to the Maritime Governments, it was noticed that the Venice Convention provided that the modern principles of disinfection should be substituted for the obsolete system of land quarantine, but, with a view to the protection of countries which may find it difficult to thus protect their borders, each of the Governments who are parties to the Convention is at liberty to close its frontiers to travellers and merchandise. The Convention also, while condemning land quarantine in general terms, permits Governments to reserve to themselves the right to take special measures with regard to certain classes of people specially—

A.—Gipsies and vagabonds.
B.—Emigrants, and persons travelling or crossing the frontier in large bodies.

10. Proceeding on the principles embodied in the Venice Convention the Government of India have from time to time expressed an opinion adverse to the establishment of cordons designed to keep the population within an infected area and have declined to agree to the general prohibition of the booking of passengers by railway to or from particular places, or to the prohibition of the booking of passengers travelling by a particular class. The detention of the inmates of an infected locality within the area of infection by means of a cordon is apt to increase the virulence of the disease, and therefore also the danger of its dissemination, by fostering the local conditions which are a main cause of its development. Experience shows that ordinarily on the outbreak of plague in a town of which part is infected and part is not, it is desirable, concurrently with the removal to a segregation camp of the inmates of the infected localities, to encourage the healthy population to leave the infected area before the disease becomes thoroughly diffused through it. But there may be cases in which the area of infection being small it may be possible to entirely evacuate it and to place the inmates of it in isolation at a place in the near neighbourhood. A guard may unobjectionably be utilized to keep the population under medical supervision within the healthy area in which it is determined to isolate them both with the object of preventing their return to the infected houses and also to minimise the possibility of infection being carried elsewhere. In such cases if proper arrangements are made for separate camps for the sick, the suspected, and the healthy, there is little or no danger of establishing a *focus* for the dissemination of the disease, while the control of the guard can be made effective and malpractices on the part of the subordinate establishments be

prevented if European agency is employed on the spot to supervise such establishments, and to check, by a system of registering the inmates of the camps, the attempts which may be made to leave them.

11. In accordance with the principles explained above the Government of India have restricted the interference with the movement of the general public by railway to medical inspection. In the terms of the Venice Convention medical intervention is restricted to the inspection of travellers with a view to the detention of those who show symptoms of plague and to the care of the sick. The Convention also dwells on the desirability of keeping under supervision all travellers from an infected area at their homes for a period of ten days from the date of their departure from the infected area. The Government of India approve of the medical inspection being conducted so as to provide for the detention in the observation camp provided for this purpose not only of persons in whom symptoms of plague or suspicious symptoms are discovered, but of all persons from the infected area who appear to be suspicious by reason of their appearance, the dirty condition of their clothes, the fact that they are travelling in gangs or belong to classes which are likely to disseminate the disease or cannot be traced on arrival at their destination or depended upon to give information should plague occur among them after arrival at their destination. All other persons should be allowed to proceed to their destination after inspection, and the rules should not, under any circumstances, exempt from their operation any class of persons as such, or be limited to persons who travel by railway by a particular class.

12. While these are the general principles which should guide the different Local Governments and Administrations in their control over the movements of the general public travelling by railway from an infected area it may often be advisable to interpose special checks either on the movement of pilgrims from an infected area to a place of pilgrimage beyond that area, or on the movement of pilgrims to a place of pilgrimage at which plague exists. When plague exists at a place of pilgrimage it may indeed be generally the most prudent course as well as the course which will in the end cause least interference with the people to definitely prohibit the religious fair at which the pilgrims intend to collect. But there may be special circumstances in which this course may seem to be inadvisable, and in such cases it appears to the Government of India that the booking of pilgrims to the place of pilgrimage or the neighbouring railway stations may be, without objection, entirely interdicted for the time. Where, on the other hand, the place of pilgrimage lies outside the infected area and it is ordinarily visited by pilgrims from the infected area it is legitimate and advisable to prohibit for the time the passage by railway of pilgrims from the infected area to the place of pilgrimage, and in accordance with these considerations the Government of India have from time to time, during the outbreak of plague, issued orders prohibiting the sale of tickets in the Bombay Presidency to pilgrims desirous of visiting other parts of India.

[True Extract.]

J. P. HEWETT,

Secretary to the Government of India.

orted deaths from Plague in Bombay Presidency (and from all causes in Bombay City) since the beginning of the Epidemic in 1896.

(The figures from the 4th June 1897 are taken from the Weekly Plague Telegrams received from the Governor of Bombay.)

Week ending.	Bombay City.			Karachi City.	Poona district.				Satara district.			Surat district.		Thana.	Kolaba.	Ratnagiri.	Nasik.	Ahmednagar.	Sholapur.	Dharwar.	Belgaum.	Baroda.	Igatpuri.	Kolhapur.	Khandesh.	Palanpur.	Janjira.	Akalkot State.	Sind.	Cutch.	Aundh State.	Other places.	Europeans.	Total of reported plague deaths for the week.
	Deaths from all causes.	Plague deaths.	*Plague deaths in corresponding week of previous year.*		City, suburbs, &c.	Kirkee.	Lanowli.	Rest of district.	Karad.	City.	Rest of district.	City.	Rest of district.																					
From Sept. 1896 to week ending 4th June 1897	41,238	10,606	—	3,381	1,889	—	—	190	—	—	128	—	1,568	3,789	1,094	298	35	32	25	—	—	43	—	78	15	92	167	—	—	3,707	—	1,650	20	29,195
Week ending 11 June ...	553	21	—	6	3	—	—	—	—	—	—	—	12	9	12	2	—	—	—	—	—		—	—	—	—	—	—	5	193	—	1	—	269
" " 18 " ...	530	22	—	1	1	—	—	—	—	—	—	—	1	9	7	3	—	—	—	—	—		—	1	—	—	—	—	1	105	—	—	—	157
" " 25 " ...	520	22	—	2	1	—	—	2	—	—	—	—	1	1	10	1	—	—	—	—	—		—	1	—	—	1	—	3	60	—	—	—	106
" " 2 July ...	534	12	—	2	3	—	—	1	—	—	—	—	—	1	6	—	—	—	—	—	—		—	—	—	—	1	—	—	41	—	1	—	70
" " 9 " ...	590	3	—	2	—	—	3	3	—	—	—	—	10	—	5	—	—	—	—	—	—	1	—	—	—	—	—	—	—	23	—	—	—	62
" " 16 " ...	609	11	—	2	5	—	8	—	14	—	—	—	13	—	3	—	—	—	—	—	—	2	—	—	—	—	—	—	—	23	—	—	—	101
" " 23 " ...	687	9	—	4	11	—	12	—	26	—	—	—	4	—	4	—	—	—	—	—	—		—	1	—	—	—	—	—	14	—	—	—	87
" " 30 " ...	935	16	—	1	5	12	34	—	43	—	—	—	5	—	3	—	—	—	—	—	—		—	3	—	—	—	—	—	33	—	—	—	158
" " 6 Aug. ...	1,038	8	—	—	7	44	33	13	65	—	1	2	—	—	—	—	—	2	—	—	—	—	12	1	—	—	—	—	—	31	—	—	—	219
" " 13 " ...	933	10	—	—	12	62	24	3	102	—	17	—	—	—	4	—	—	—	—	—	—		5	3	—	3	—	—	—	30	—	—	—	278
" " 20 " ...	977	21	—	—	9	83	6	15	111	—	21	4	—	9	9	—	—	—	—	—	—		8	1	—	5	—	—	—	26	—	—	—	330
" " 27 " ...	848	17	—	—	12	76	19	46	181	—	84	4	1	11	5	—	—	—	—	—	—		17	—	—	4	—	—	—	51	—	—	—	530
" " 3 Sept. ...	796	29	—	—	12	111	11	52	235	—	143	5	5	16	2	—	—	1	—	—	—		68	1	—	22	—	—	—	60	—	—	—	778
" " 10 " ...	840	26	—	—	15	96	7	79	100	—	148	22	11	9	16	10	—	—	—	—	—		91	3	—	13	—	—	—	101	—	—	—	751
" " 17 " ...	914	35	—	—	41	44	3	76	84	—	222	13	5	18	16	—	—	—	—	—	—		41	1	—	43	—	—	—	114	—	—	—	763
" " 24 " ...	854	46	—	—	74	18	8	76	50	—	306	24	15	25	17	1	—	1	—	—	—		55	—	—	50	—	—	—	106	—	—	1	875
" " 1 Oct. ...	760	52	—	1	110	5	5	109	73	—	433	24	10	11	11	—	—	2	5	—	—	1	41	—	—	38	—	—	—	106	—	—	—	1,047
" " 8 " ...	781	38	91	—	143	10	4	82	15	—	569	18	3	9	9	—	6	—	8	—	—		38	3	—	37	—	—	—	106	—	6	—	1,108
" " 15 " ...	762	35	40	—	191	6	4	58	17	—	600	42	1	10	9	—	8	17	5	—	—		14	1	—	27	1	—	—	105	—	—	—	1,157
" " 22 " ...	792	48	67	—	281	10	3	48	7	—	709	54	6	14	8	—	20	28	40	2	—		16	—	—	34	9	—	—	82	—	—	—	1,424
" " 29 " ...	746	44	71	—	364	7	5	70	9	—	755	71	15	9	6	—	19	26	69	—	3	8	8	—	—	64	4	—	—	91	—	—	—	1,647
" " 5 Nov. ...	703	41	50	—	460	19	2	131	5	—	926	71	26	7	9	—	19	14	117	—	10		—	—	—	34	2	—	11	79	—	—	—	1,985
" " 12 " ...	699	60	60	—	393	4	—	73	4	—	761	135	15	3	3	—	35	28	107	—	14	—	—	—	—	23	3	—	16	75	—	—	—	1,752
" " 19 " ...	691	45	52	—	436	3	—	126	2	—	1,001	150	11	12	5	—	57	20	164	—	39	4	—	—	—	5	—	2	4	55	—	—	—	2,141
" " 26 " ...	707	79	75	—	433	3	1	62	5	—	712	113	17	3	15	1	60	26	269	1	49	8	—	17	—	21	1	3	10	50	—	—	1	1,960
" " 3 Dec. ...	702	78	89	—	394	—	—	101	2	—	595	58	15	5	6	—	38	46	355	—	48	7	—	—	—	16	1	6	10	43	—	—	—	1,824
" " 10 " ...	717	71	203	—	383	3	—	62	1	—	439	93	20	11	5	2	51	20	448	25	90	3	—	—	4	10	—	8	5	33	—	—	—	1,787
" " 17 " ...	818	137	255	—	350	—	—	67	—	—	382	63	22	8	3	—	64	71	278	4	48	9	—	29	24	42	2	12	2	25	—	—	—	1,642
" " 24 " ...	888	172	262	—	250	—	—	55	—	—	271	55	33	15	11	1	70	51	197	1	54	24	—	25	17	91	5	10	3	15	—	—	—	1,426
" " 31 " ...	1,001	225	389	—	167	2	—	49	—	80	208	49	36	9	11	—	66	27	66	—	60	28	—	—	7	30	—	8	1	26	—	—	—	1,155
1898. Week ending 7 Jan. ...	1,118	357	352	—	111	—	—	37	—	75	105	56	37	11	5	—	99	52	103	—	77	41	—	15	12	36	3	1	3	41	38	3	—	1,318
" " 14 " ...	1,423	557	325	—	112	—	—	17	—	79	167	69	49	16	9	—	114	40	33	2	76	54	—	29	12	46	—	1	1	46	18	—	—	1,547
" " 21 " ...	1,706	761	513	—	77	—	—	37	—	71	114	50	81	22	11	—	74	37	75	—	89	106	—	24	10	17	—	—	—	61	6	1	1	1,725
" " 28 " ...	1,726	840	402	—	55	—	—	17	—	73	136	37	65	15	20	—	48	30	145	—	53	117	—	37	12	33	2	—	1	38	8	3	—	1,785
" " 4 Feb. ...	1,999	1,004	607	—	30	—	—	14	—	33	87	59	73	25	20	—	36	39	95	1	54	155	—	64	13	35	—	—	1	19	3	2	—	1,862
" " 11 " ...	2,140	1,220	813	—	37	—	—	14	—	29	81	47	89	25	28	3	44	29	160	2	74	130	—	46	14	23	—	—	—	18	13	1	—	2,127
" " 18 " ...	2,046	1,136	849	—	21	—	—	25	—	27	57	51	59	16	29	2	35	21	55	—	33	137	—	80	11	23	—	3	—	8	11	—	2	1,842
" " 25 " ...	2,059	1,104	730	—	13	—	—	7	—	18	89	58	120	30	30	4	30	24	66	1	72	229	—	61	15	7	—	15	—	11	7	2	1	2,014

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